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SOME NOTES ON BEING AND PREDICATION

RECENTLY the nature of the so-called existential proposition has been the object of renewed discussion among logicians as well as metaphysicians. I say "renewed" because, as is recognized by at least some contemporary disputants, the problems involved have long been recognized. It is not surprising, then, that Thomists should feel moved to bring to the attention of others the thought of St. Thomas on existential propositions. Indeed those who profess to see in the metaphysics of St. Thomas a kind of existentialism have been especially drawn to his views on this matter and purport to find in his remarks a basis for some rather startling statements about the concept of being. In this paper I propose to consider some of the relevant passages in St. Thomas as well as an influential existential interpretation of them. I take it that this consideration will lay bare a number of historical inaccuracies and doctrinal flaws in "Thomistic Existentialism."

1. *The Existential Proposition*

It is not surprising that it is in his commentary on Aristotle's *De Interpretatione* that St. Thomas speaks of what is called the existential proposition. In the course of a comparison of enunciations which include an " infinite noun," Aristotle distinguishes those in which *is* is predicated as *tertium adiacens* from others in which it is not.[1] *Is* is a *tertium* when it attaches to a noun or verb, e. g., " Socrates is just." Opposed to such enunciations are others, e. g., " Socrates is." In the latter kind, *is* is the principal predicate. In " Socrates is just," *is* is not the principal predicate but, together with *just*, forms one predicate.

With regard to the first [i. e., that when the verb " is " is used as a third element in the sentence, there can be positive and negative propositions of two sorts], two things must be understood.

The first of these is the meaning of his [Aristotle's] statement, '*Is* is predicated as a third element (*tertium adiacens*).' To understand this one must consider that the verb *is* is sometimes predicated in an enunciation according to itself, as when it is stated, *Socrates is*—by which we intend to signify no more than that Socrates exists in reality (*in rerum natura*).

But sometimes *is* is not predicated *per se* as though the principle predicate, but as though conjoined to the principle predicate in order to connect it to the subject, as when it is stated, *Socrates is white*, it is not the intention of the one speaking to assert Socrates to be in reality, but to attribute whiteness to him through the intermediary of this verb *is*. And therefore in such cases *is* is predicated as adjacent to the principle predicate.[2]

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[1] *De Interpretatione*. 10, 19b 19-22: " When the verb 'is' is used as a third element (*tertium adiacens*) in the sentence, there can be positive and negative propositions of two sorts. Thus in the sentence 'man is just' the verb is used as a third element, call it verb or noun, which you will." (Oxford translation.)

[2] *In II Periherm.*, lect. 8, n. 2: " Circa primum duo oportet intelligere: primo quidem, quid est hoc quod dicit, 'est tertium adiacens praedicatur.' Ad cuius evidentiam considerandum est quod hoc verbum *est* quandoque in enuniciatione praedicatur secundum se; ut cum dicitur, 'Socrates est,' per quod nihil aliud intendimus significare, quam quod Socrates sit in rerum natura. Quandoque vero non praedicatur per se, quasi principale praedicatum, sed quasi conjunctum principali praedicato ad connectendum ipsum subiecto; sicut cum dicitur, 'Socrates est albus,' non est intentio loquentis ut asserat Socratem esse in rerum natura, sed ut

From this passage it is clear that in "Socrates is," *is* is the predicate; the existential proposition, like any other simple enunciation, is composed of a noun and a verb, a subject and a predicate. In propositions in which *is* is a *tertium adiacens* there are not two predicates but one, e. g. is-white. "And it is called *third*, not because it is a third predicate, but because it is a third expression (*dictio*) placed in the enunciation, which, along with the word predicated, constitutes one predicate, in such a way that the enunciation is divided into two parts and not into three." [3] St. Thomas also notes the obvious signification of *is* in "Socrates is": when we make such an assertion, we mean that Socrates is *in rerum natura*. It is important to stress that St. Thomas asserts (1) that existence is a predicate, and (2) that existence, *is*, signifies something. Both of these assertions have been denied in the interests of an existential interpretation of St. Thomas' doctrine.

M. Gilson tells us, in *Being and Some Philosophers*, that logic, apparently Aristotelian logic, cannot handle the existential proposition. "Propositions are usually defined as enunciations which affirm or deny one concept of another." [4] M. Gilson divides the proposition into "one-term" and "two-term" propositions. "Man is rational" is said to be a two-term proposition. *Man* and *rational* are the terms; *is* is not a term "because it designates, not a concept, but the determinate relation which obtains between two terms." [5] "John is," is an example of a Gilsonian one-term proposition: *John* is the only term. This leaves *is* unexplained and M. Gilson pronounces the breakdown of logic. "In short, if all propositions entail either a composition or division of concepts, how can there be a proposition in which there is only one concept?" [6] One could

attribuat ei albedinem mediante hoc verbo *est;* et ideo in talibus *est* praedicatur ut adiacens principali praedicato."

[3] *Ibid.*: "Et dicitur esse tertium, non quia sit tertium praedicatum, sed quia est tertia posita in enunciatione, quae simul cum nomine praedicato facit unum praedicatum, ut sic enunciatio dividatur in duas partes et non in tres."

[4] E. Gilson. *Being and Some Philosophers* (Toronto: 1949), p. 190.

[5] *Ibid.*

[6] *Ibid.*, p. 191.

point out, of course, that the integral parts of the enunciation, according to Aristotle, are the noun and the verb, that "John is" clearly qualifies as an enunciation in Aristotelian logic. However, there are reasons for following further M. Gilson's analysis, for it leads us to the heart of his Existentialism.

M. Gilson observes that logicians have a way of turning "one-term" propositions into "two-term." Thus, "Peter runs" can be rendered "Peter is running."

> Now, in such cases as *I am* or *God is* the transformation is not even possible, because in *I am being* or *God is being,* the predicate is but a blind window which is put there for mere verbal symmetry. There is no predicate even in the thus-developed proposition, because, while *running* did not mean the same thing as *is, being* does. In other words, *is-running* does not mean *is,* and this is why, in the first case, the verb is a copula, which it is not in the second case. The metaphysical truth that existence is not a predicate is here finding its logical verifications.[7]

In "John is," according to M. Gilson, *is* is neither predicate nor copula. Since *is* clearly is a predicate in "John is," one may well wonder what M. Gilson is getting at. The following remark, summarizing his denial that *is* is a predicate in such propositions as "John is" gives us the clue. "All the rest is mere verbiage calculated to make us believe that existence falls under the scope of conceptual predication." [8] M. Gilson's denial that *is* is a predicate is closely linked to his view on the manner in which the intellect grasps existence.

2. *Existence and Conception*

If existence is not predicated in existential propositions this is because predicates are concepts and, M. Gilson contends, there is no concept of existence. What then is being asserted in existential judgments?

Noting that there is no *a priori* reason to doubt that human thought at the very outset goes straight to what is the core of being,[9] M. Gilson says that existence is attained in the judgment. And the judgment must be distinguished from abstract

[7] *Ibid.*, p. 193. [8] *Ibid.* [9] *Ibid.*, p .201.

representation.[10] What can be grasped and represented abstractly is essence; if then we assume that existence is not essence, it seems to follow that existence cannot be absractly represented. Intellect attains existence only by means of the judgment.

> The concept which expresses an essence cannot be used as a complete expression of the corresponding being, because there is in the object of every concept something that escapes and transcends its essence. In other words, the actual object of a concept always contains more than its abstract definition. What it contains over and above its formal definition is its act of existing, and, because such acts transcend both essence and representation, they can be reached only by means of judgment. The proper function of the judgment is to say existence, and this is why judgment is a type of cognition distinct from and superior to pure and simple abstract conceptualization.[11]

Touching on the theme of his book, M. Gilson notes that " essentialistic " metaphysics identify what can be understood, the essence of the thing, with the whole of reality and intelligibility. Judgment, which has existence and not essence as its object, corrects this penchant and guards against abstract speculation. Philosophy " must use judgment to restore essence to actual being." [12] In judgments of existence, my mental act answers the existential act of the known thing. " Let us rather say that such a judgment intellectually reiterates an actual act of existing. If I say that *x is*, the essence of x exercises through my judgment the same act of existing which it exercises in x." [13] That all of this is the doctrine of St. Thomas is clear, M. Gilson feels, from *In Boethii de Trinitate expositio*, q. 5, a. 3.

M. Gilson's analysis of existential propositions, then, involves the view that existence cannot be conceived, that it functions neither as copula nor predicate in such propositions as " John is." However, existence, the core of being reached at the very outset of the intellectual life, can be attained in the judgment when we return the abstracted essence to its existence: we say that it is and our act of judging reflects in its structure the

[10] *Ibid.*, p. 202. [11] *Ibid.* [12] *Ibid.*, p. 203. [13] *Ibid.*

structure of reality where essence is composed with existence. It will be appreciated that all this has a decided effect on the question of the concept, not of existence, but of being.

3. *The Concept of Being*

Being in the view of M. Gilson, cannot be the object of purely abstract cognition nor can essence be legitimately severed from its act of existence.[14] If, in existential judgments, we correct the essentializing tendency of our mind by restoring essence to existence, this will be *a fortiori* necessary when it is a question not of *this* being, but of Being. Describing the "abstract essence of being" as a "metaphysical monster," M. Gilson adds:

> For, indeed, there is no such essence. What is conceivable is the essence of *a being*. If the correct definition of being is "that which is," it necessarily includes an *is*, that is existence. To repeat, every *ens*, is an *esse habens*, and unless its *esse* be included in our cognition of it, it is not known as an *ens*, that is, as a *be-ing*. If what we have in mind is not this and that being, but being in general, then its cognition necessarily involves that of existence in general, and such a general cognition still entails the most fundamental of all judgments, namely that being is.[15]

What is surprising here, of course, is the introduction of "existence in general" which surely involves knowing in general what existence is, that is, having a concept of it. And, in "Being is," a judgment spoken of as necessary for metaphysics, to what existence would we be returning the essence of being (the "metaphysical monster")? Surely not to some existence outside the mind, as seemed to be suggested when existential propositions having singular subjects were being discussed, for there is no existence in general outside the mind. And, if existence in general is general thanks to being in the mind, then abstraction, representation, indeed everything M. Gilson was concerned to rid metaphysics of lest it becomes "essentialistic," seem involved.

As a matter of fact, if *ens* signifies *id quod habet esse*, it

[14] *Ibid.*, p. 204. [15] *Ibid.*

would seem that in the concept of being we already have the *esse* to be introduced by the general existential judgment, " Being is." Is this to be taken to mean " Essence exists "? This would be a strange issue of M. Gilson's analysis, since being is then equated with essence. The real point, it emerges, is that *being* signifies " essence exists." Despite the fact that this makes of " Being is " a compound proposition, it is indeed what M. Gilson intends, something quite clear from the second edition of his book.

There, in an appendix, M. Gilson considers a number of objections posed by Fr. Regis, O. P. in his review of the first edition.[16] The appendix is particularly important since in it M. Gilson seems to reject what he had maintained in the first edition. Fr. Regis had noted that, in the commentary on the *Peri Hermeneias*, St. Thomas speaks of existence as a predicate, and, since M. Gilson's intention was to present the viewpoint of St. Thomas, the texts referred to by Fr. Regis are matters of serious concern. Faced with these texts, M. Gilson seemingly must make some adjustments in his earlier position if it is to be identical with that of St. Thomas. What he does is to reduce the difference between his views and those of St. Thomas to the level of language; the appendix is introduced under the heading, *Sapientis enim non est curare de nominibus.* It soon becomes clear, however, that something more than language is at stake.

> The remarks of Fr. Regis are fully justified. No Thomist aiming to express the point of view of Thomas Aquinas as he himself would express it should write that existence (*esse*) is not known by a concept. Historically speaking, our own formulas are inaccurate, and had we foreseen the objections of Fr. Regis, we would have used another language, or made clear that we were not using, the language of Saint Thomas. We should avoid as much as possible unnecessary misunderstandings. The question is: can these misunderstandings be completely avoided? [17]

M. Gilson is now willing to admit that existence is known by

[16] The Modern Schoolman, XXVIII, 2 (January, 1951), pp. 121-127.
[17] Gilson, *Op. cit.*, pp. 221-2.

means of a concept. Indeed, he feels that his earlier distinction betwen *conceptus* and *conceptio* [18] indicates that in some sense of the word *concept* he had allowed that there is a concept of existence. He notes that Fr. Regis, O.P. does not seem to honor this distinction. M. Gilson had earlier used the term *conceptio* to cover the composite act whereby essence is grasped and judged to exist. But the point at issue is not whether we agree that *conceptio* can be used to signify a judgment, but whether there is a *conceptus* of existence analytically prior to any existential judgment. It is difficult to interpret M. Gilson as affirming this. He notes that the more restricted term, *conceptus*, has been taken over by unidentified essentialists as their own and confined to the apprehension of essence. Because of the difficulties of making himself understood in the alleged essentialistic atmosphere of the day, he has restricted his use of *concept* to the " simple apprehension of an essence." Existence can be the object of *conception*. " Otherwise how could it be known? But it cannot be known by the simple conceptual apprehension of an essence, which it is not." [19] This is ambiguous. It can mean either that the concept of the essence of any creature does not include its existence, or that there is no concept (*conceptus*) of existence. M. Gilson notes that anyone is free to reject his distinction of *conceptio* and *conceptus*, but the question is whether the use made of it here can be accepted as the thought of St. Thomas. " John is," can be the object of a *conceptio;* of John we can have a *conceptus*. But can there be a *conceptus* of existence? If not, it is clear that there will be no predication of existence and hence no *conceptio* of " John is." [20]

Admitting that St. Thomas speaks of existence as a predicate, M. Gilson feels that such talk is nowadays misleading. " For, if we tell them (non-Thomists) that existence is a predicate,

[18] *Ibid.*, p. 190, n. 1.

[19] *Ibid.*, p. 223.

[20] Cf. *In IV Metaphys.*, lect. 10, n. 664: "Significatio autem orationis a significatione nominum dependet. Et sic oportet ad hoc principium redire, quod nomina aliquid significant. . . ."

they will understand that, according to Thomas Aquinas, actual existence, or *esse*, can be predicated of its essence as one more essential determination." [21] If the meaning of *predicate* has changed, one might feel that a clarification of the old and new meanings would be of help in avoiding misunderstanding. M. Gilson, however, seems intent on questioning the adequacy of Aristotle's logic.

> In his commentaries on Aristotle does Saint Thomas always express his deepest personal thought on a given question? Unless we admit that logic is a strictly formal science wholly unrelated to metaphysics, it is hard to imagine that the true Thomistic interpretation of a logic applicable to *habens esse* can be identically the same as that of a logic applicable to a metaphysics of *ousia*.[22]

This is a most unfortunate turn in the discussion. M. Gilson's hint at the possibility of an " existential logic " can only be as valuable as his estimate of Aristotle's metaphysics, as his analysis of the logical intentions of proposition, predicate, etc., and as any indication he may be able to give that the difficulties he has raised are due to the logic of Aristotle. Of course, only the second and third points concern us here.[23]

M. Gilson recalls [24] that St. Thomas assigns three meanings to *esse*: it can mean essence, the actuality of essence, or the truth of a proposition. (*I Sent.*, d. 33, q. 1, ad 1) Only the first two are real being. When we use *est* in logic, it is not a *tertium praedicatum*, for in " John is white," *is-white* is the predicate. So too in " John is," *is* is the predicate according to St. Thomas. Far from being the solution it is just this that remains M. Gilson's problem, a problem, according to M. Gilson, " whose solution is not to be found in the excellent texts so aptly quoted by Fr. Regis." [25] In " Socrates is," *Socrates* " refers to an

[21] Gilson, *Op. cit.*, p. 224.

[22] *Ibid.* On all this, cf. E. Trepanier, " Premières Distinctions sur le mot ' être,' " *Laval Théologique et Philosophique* XI, 1 (1955), pp. 25-66.

[23] On the first point, cf. John D. Beach, " Aristotle's Notion of Being," THE THOMIST, XXI, 1 (January, 1958), pp. 29-43.

[24] Gilson, *Op. cit.*, p. 224.

[25] *Ibid.*, p. 225.

essence, but does its predicate refer to an essence as in the case of *albus*? There is no problem as to its conceivability: I have the concept of 'existing Socrates' which is the intelligible import of this judgment. Our own question is: if *est* is a predicate, what kind of a predicate is it?"[26] It has to be noted that an unexplained shift takes place here. We are told that *Socrates* refers to an essence and asked if *is* does? But the original question was: is there a concept of *esse*?—not whether *esse* is an essence. To identify *essence* and *concept* is simply to beg the question. Moreover, it is noteworthy that the conceivability of existence is only through the conception of "existing Socrates." That this is all that is meant by the conceivability of existence is clear from the following passage.

> Let us agree that in Thomas Aquinas the verb *est* is a predicate; what is the nature of the cognition we have of what it predicates? This is no longer a logical problem; it is a problem in noetics and in metaphysics, because it deals with the nature of being and of our knowledge of it. When we predicate *est*, we are not predicating the 'quidditas vel natura rei.' Nor for that matter do we predicate something which belongs to the essence of Socrates (such as 'homo'), or that inheres in it (such as 'albus'). Logically speaking, it could be said that *esse* inheres in the subject Socrates, but metaphysically, it does not, because where there is no *esse* there is no Socrates. Granting that *est* is a logical denomination of Socrates as existing, the metaphysical status of the denominated still remains an open question. Among those who refuse the composition of essence and *esse*, quite a few have been misled precisely by the fact that their metaphysical inquiries were conducted in terms of logic. For, indeed, as soon as we do so, *est* becomes a predicate like all other predicates, and we imagine ourselves in possession of a distinct concept of *esse* in itself, apart from the concept which we do have of Socrates-conceived-as-existing.[27]

Since the only way in which existence can be conceived is in such a conception as 'existing Socrates,' it is clear that existence is attained only in the judgment, that there is no concept (*conceptus*) of existence. Surely, then, there is no point in speaking of existence as a predicate. If existence can only be

[26] *Ibid.* [27] *Ibid.*

conceived in a conception of an existential judgment (which does not involve a *conceptus* of existence), any talk of the predication of existence would be concerned with the predication of a proposition.

4. *The Simple Apprehension of Being*

The contention of "Existential Thomism" that the concept of being is a judgment or proposition contradicts explicit remarks of St. Thomas. In order to see this is so, it must be made clear that this view on the concept of being has to do with what the intellect first knows, *ens primum cognitum*. M. Gilson, in the context of his argument that *being* involves at once apprehension and judgment notes that there is no *a priori* reason to doubt that reason "at the outset" goes to what is the core of being, i.e. existence.[28] The composition of essence and existence in a judgment which is the conception of being seems to answer to the being which, as St. Thomas says, *primo cadit in intellectu*.[29] Now, although it is certainly the thought of St. Thomas which M. Gilson wishes to expose, it is with St. Thomas that he seems to disagree.

In many places, St. Thomas writes that being is what the intellect first grasps.[30] Moreover, being (*ens*) is said to be attained by simple apprehension, by the first operation of the mind, which is analytically prior to judgment.

> But it should be stated that those things which are more universal according to simple apprehension are the first known, for that which falls first upon the intellect is being. . . .[31]

As evidence of this, it should be understood that since there is a two-fold operation of the intellect—one in which it knows "what something is" (*quod quid est*), which is called "the understanding of indivisibles"; the other, by which it composes and divides—

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[28] *Ibid.*, p. 201.

[29] *Ibid.*, cf. p. 205. Cf. J. F. Anderson, *Review of Metaphysics* XI, 4 (June, 1958), p. 557.

[30] E.g. *De Ent. et Ess., proem.; De Verit.*, q. 1, a. 1.

[31] *In I Metaphys.*, lect. 2, n. 46: "Sed dicendum quod magis universalia secundum simplicem apprehensionem sunt prima nota, nam primo in intellectu cadit ens. . . ."

in both there is some first thing. In the first operation, indeed, of the intellect there is some first thing which falls upon the conception of the intellect, namely, that which I name "being."—nor is anything able to be conceived by the mind in this operation unless "being" be understood.[32]

Both Cajetan and John of St. Thomas have discussed this doctrine at length. Being as first known by our intellect is, Cajetan maintains, *ens concretum quidditati sensibili*.[33] The formula was carefully chosen. St. Thomas will often say that it is the quiddity of material things which is the connatural object of the human intellect, since our concepts are abstracted from the sense image, the phantasm. The intellect is said to be able to know *what* the things are whose sensible qualities are attained by the senses, and, of course, what sensible qualities are. Since the *whatness* or quiddity, though not a *per se* object of sense, is intellectually attainable by us thanks to the instrumentality of the senses, it is denominated 'sensible.' The sensible quiddity, however, is not something which can be sensed *per se*. The concepts or ideas formed by the mind are first of all means of knowing sensible things—and nothing more. Of course, as it happens, knowledge of what sensible things are can lead us to the certainty that there are things which are not sensible, either *per se* or in the *per accidens* way sensible quiddity is. Whatever we come to know of such things will be by an analogy with sensible things, via the connatural objects of our intellect. That is why our knowledge of "separate substance" is always radically imperfect. At the outset of the intellectual life, there will be no question of forming a concept which will be applied to anything other than what is attained by the senses. And, if the first concept is that of being, as St. Thomas teaches, it will be sensible quiddity

[32] *In IV Metaphys.*, lect. 6, n. 605: Ad huius evidentiam sciendum est, quod cum duplex sit operatio intellectus: una, qua cognoscit quod quid est, quod vocatur indivisibilium intelligentia: alia, qua componit et dividit: in utroque est aliquod primum: in prima quiddem operatione est aliquod primum, quod cadit in conceptione intellectus, scilicet hoc quod dico ens; nec aliquid hac operatione potest mente concipi, nisi intelligatur ens."

[33] Cajetan. *De Ent. et Ess., proem.*, n. 5.

which is known as being. *Concretum*, in Cajetan's formula, is opposed to *abstractum*. He wants to insist that *ens primum cognitum* is not grasped by what he calls formal abstraction If it were, it would be *ens commune*, the subject of metaphysics. It is nonsense to say that being is known in this way at the outset of the intellectual life. By means of what Cajetan calls total abstraction, being is grasped as a universal whole predicable of its subjective parts.[34] It may seem odd that Cajetan will not allow that being is first known as a universal whole. Does not St. Thomas explain the priority of being in terms of *magis universalia*? And, after all, it would seem that *being* can be predicated of whatever the senses attain. Cajetan in a very subtle, exhaustive and illuminating discussion [35] has argued that a nature must first be known as a definable whole, an integral whole, before it can be known as a predicable or universal whole. And, since confused knowledge precedes distinct knowledge of the same thing, Cajetan has concluded that *ens primum cognitum* is *being* grasped confusedly as a definable whole. *Ens concretum quidditati sensibili*, then, is not known by total abstraction or by formal abstraction. But, as John of St. Thomas notes: "The intellect is said, nevertheless, to begin from that which is more universal, since it begins from that predicate which is disposed to sustain the greater universality." [36]

We may object to this *concretum* on the grounds that intellectual knowledge is by definition abstract. If being is the first concept formed by the mind, isn't it, like any other concept, abstracted by the agent intellect from a phantasm? Cajetan, of course, has no intention of denying this. "In a third way, as having neither of these conditions, yet nevertheless abstracted from singulars." [37] The first concept is freed from materiality

[34] Cf. *Summa Theol.*, I, II, q. 120, a. 2.

[35] Cajetan. *loc cit.*

[36] John of St. Thomas. *Cursus Philosophicus*, T. 2, p. 25a40-43: "Dicitur tamen incipere intellectus ab universaliori, quia incipit ab eo praedicato quod mairori universalitati substerni aptum est."

[37] Cajetan. *Ioc. cit.*: "Tertio modo ut neutram istarum conditinum habens, abstractum tamen a singularibus."

and singularity and in that sense is abstract. But Cajetan, aware that even total abstraction implies distinct knowledge of what it is that is predicable of many, and wanting to retain the truth insisted on by St. Thomas [38] that the first act of our intellect is attended by a maximum of confusion and potentiality, speaks of the *primum cognitum* as *concretum quidditati sensibili.*

John of St. Thomas, in discussing the same matter, raises the objection that the singular or singularity is what the intellect first grasps. In handling this, he introduces an explanation of the first confused knowledge of being that " Existential Thomists " should find sympathetic. John answers the objection by pointing out that intellectual knowledge of singularity presupposes distinct knowledge of the nature of which *this* is a singular instance. The objector continues: let us say that at the outset the intellect grasps singularity, not as to its *quid sit,* but as to its *an sit.* John's reply is interesting.

But let it be that the intellect begin to know the quiddity of its object not quidditatively, but as to " whether it is " (*an est*), in such a way that neither concerning the nature itself, nor concerning the singularity does it attain any other predicate than the " whether it is " (*an est*)—nevertheless by this fact it does not know the singular as it is singular, but in a confused way, and under a certain most common notion of its being, in such a way that of the singularity it knows nothing other than that it is being. Now this is to know something common to the singular and to the nature—for of both there is had knowledge as to the " whether it is " (*an est*), and thus being or " whether it is " as in concretion with, or applied to, some sensible singular, will be that which is first known (*primum cognitum*) by the intellect. For which reason—and this is very much to be noted—when the intellect knows something as to " whether it is," it does not prescind from the " what it is " (*quod quid est*) or quiddity, for this is impossible since it is its formal object and what is first and *per se* intelligibile. Rather, solely it does not know it quidditatively, i. e. by penetrating the proper constitution of its quiddity and the cause of its being, but in the quiddity itself it attains alone a certain predicate which is

[38] Cf. *Summa Theol.*, I, q. 85, a. 3.

overwhelmingly common and confused, which is being; and this is what it knows at that time as "what it is" (*quod quid*).[39]

What John of St. Thomas seems to be saying is that the first concept formed by the intellect is a means of knowing sensible quiddities, not with respect to what they determinately are, but under the formality of having existence. Doubtless what existence means here is presence to sense. In other words, being is *id quod habet esse*. It is noteworthy, however, that although John speaks of this first concept as the most confused predicate, he does not speak of any actual predication. That could hardly take place without a predicate.

Being as first conceived or apprehended by our intellect is the most common predicate; it can be predicated of that from whose image the concept has been abstracted. What-is, being, like any concept, may enter into composition and division, i. e. become subject or predicate of an enunciation. Like any other concept, being, what-is, is not of itself a judgment or assertion susceptible of truth or falsity in itself. However, unlike most other concepts, it can appear to assert or affirm existence. For this reason, Aristotle and St. Thomas go to special pains to show that this is not the case.

The noun and the verb are parts of speech (*oratio*); alone neither one signifies what is true or false.[40] Indeed, only that *oratio* which is an enunciation does. What nouns and verbs

[39] John of St. Thomas. *loc. ct.*, p. 23b38-24a27: "Sed esto ita sit, quod intellectus incipiat cognoscere quidditatem sui obiecti non quidditative, sed quoad an est, ita quod neque de ipsa natura neque de ipsa singularitate attingat aliud praedicatum quam ipsum an est, tamen hoc ipso non cognoscitur singulare ut singulare est, sed sub confusione et ratione quadam communissima ipsius esse, ita quod de ipsa singularitate non cognoscit nisi quod sit ens. Hoc autem est cognoscere aliquid commune ipsi singulari et ipsi naturae; de utroque enim datur cognitio quoad an est, et sic ipsum esse seu an est ut concretum seu applicatum alicui singulari sensibili erit primum cognitum intellectus. Quare (quod valde advertendum est) quando intellectus cognoscit aliquid quoad an est, non praescindit a quod quid seu a quidditate, hoc enim est impossible, cum sit formale eius obiectum et primo et per se intelligibile, sed solum non cognoscit quidditative, id est penetrando constitutionem propriam quidditatis et causas essendi, sed in ipsa quidditate solum attingat praedicatum quoddam valde commune et confusam, quod est ipsum esse; et hoc est quod tunc cognoscit ut quod quid."

[40] *In 1 Periherm.*, lect. 5, n. 16.

have in common is that they both signify and that neither signifies what is true or false. With respect to the verb, the second point is best shown in the case of that verb which seems an exception to it, i. e. *to-be* or *esse*. "For although every finite verb implies existence (*esse*) since to run is to *be* running, and every infinite verb implies non-existence (*non esse*), since not to run is *not* to *be* running, nevertheless no verb signifies this whole which is for a *thing to be* or *not to be*." [41]

Here, in the Oxford translation, is Aristotle's text. "Verbs in and by themselves are substantival and have significance, for he who uses such expressions arrests the hearer's mind and fixes his attention; but they do not as they stand express any judgment, either positive or negative. For neither are 'to be' and 'not to be' and the participle 'being' significant of any fact, unless something is added; for they do not themselves indicate anything, but imply a copulation of which we cannot form a conception apart from the things coupled." [42] The Latin translation St. Thomas had did not translate *τὸ ὄν* as *being*, but as *is*. St. Thomas is aware of this [43] and comments both readings, i. e. *ipsum est* and *ipsum ens*.

He begins with the latter. "For in order to prove that verbs do not signify a thing to be or not to be, he [Aristotle] takes that which is the fount and source of existence, namely, being itself—concerning which he says that it is nothing. . . ." [44] St. Thomas, before giving his own explanation of this, examines the readings of other commentators. Alexander takes the state-

[41] *Ibid.*, n. 16: "Quamvis enim omne verbum finitum implicet *esse*, quia currere est currentem esse, et omne verbum infinitum implicet *non esse*, quia non currere est non currentem esse; tamen nullum verbum significat hoc totoum, scilicet *rem esse*, vel *non esse*.

[42] *I Periherm.*, 16b19-25: *ἀυτὰ μὲν οὖν καθ' αὐτὰ λεγόμενα τὰ ῥήματα ὀνόματά ἐστι καὶ σημαίνει τι,—ἵστησι γὰρ ὁ λέγων τὴν διάνοιαν, καὶ ὁ ἀκούσας ἠρέμησεν—ἀλλ' εἰ ἔστιν ἢ μὴ οὔπω σημαίνει· οὐ γὰρ τὸ εἶναι ἢ μὴ εἶναι σημεῖόν ἐστι τοῦ πράγματος, οὐδ' ἐὰν τὸ ὂν εἴπῃς ψιλόν. αὐτὸ μὲν γάρ οὐδέν ἐστιν προσσημαίνει δὲ σύνθεσίν τινα, ἣν ἄνευ τῶν συγκειμένων οὐκ ἔστι νοῆσαι.*

[43] *In 1 Periherm.*, lect. 5, n. 19.

[44] *Ibid.*: "Ad probandum enim quod verba non significant rem esse vel non esse, assumpsit is quod est fons et origo ipsius esse, scilicet ipsum ens, de quo dicit quod nihil est. . . ."

ment that "being is nothing" (*ens nihil est*) to refer to the equivocal signification of *being*. An equivocal noun, taken by itself, signifies nothing. St. Thomas disagrees. Not only does *being* not signify nothing, it signifies many (*multa*), but according to prior and posterior in meanings (*secundum prius et posterius*)—"whence it is understood absolutely speaking of that which is said in the prior way."[45] Moreover, Alexander's approach has little to do with Aristotle's point. Porphyry says that "*being* does not signify the nature of anything, as does the word 'man' or 'wise,' but solely designates a certain conjoining." If this were the case, St. Thomas observes, *being* would be neither noun nor verb, but would be like the conjunction and preposition.

What Aristotle does mean, as Ammonius pointed out, is that *ens* does not signify what is true or false. Nevertheless, even Ammonius didn't get to the heart of the matter.

> And therefore, to follow the words of Aristotle more closely, one should consider that he said that the verb does not signify a thing *to be* or *not to be*, even *being* (*ens*) does not signify a thing to be or not to be. And thus he says, "It is nothing" (*nihil est*)—i. e. does not signify anything to be.
>
> For this was most clear with the expression *being*: since being is nothing other than *what is* (*quod est*). And thus it appears both to signify a *thing*, by the expression QUOD, and *existence* by the expression EST. And indeed if this expression *being* should signify *existence* principally, as it signifies a *thing* which has *being*, without doubt it would signify that something exists.
>
> But it does not principally signify that composition which is implied in the expression EST, but it "consignifies" it insofar as it signifies a *thing* having being.
>
> Whence such a "consignification" [or implied signification] does not suffice for truth or falsehood—since the composition in which truth and falsehood consist cannot be understood except insofar as it connects the extremes of the composition.[46]

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[45] *Ibid.*: ". . . unde simpliciter dictum intelligitur de eo, quod per prius dicitur."

[46] *Ibid.*, n. 20.: "Et ideo ut magis sequamur verba Aristotelis considerandum est quod ipse dixerat quod verbum non significat rem *esse* vel *non esse*, sed nec ipsum ens significat rem esse vel non esse. Et hoc est quod dicit 'nihil est,' idest non significat aliquid esse. Etenim hoc maxime videbatur de hoc quod dico *ens;* quia

Being signifies what-is, not "something exists." *Being* names the thing from the formality of existence, but it does not signify that the thing exists. Only an enunciation can do this and therefore signify the kind of composition which is true or false. Thus, St. Thomas teaches that *being*, although it names a thing from existence, principally signifies *what* has existence. it is the *res* that is named and signifies by the word, *being*, not the factual existence of it. It seems clear, then, that *id quod habet esse, quod est, habens esse*, etc. are not propositions but phrases; the present text clearly expresses the doctrine that *ens* does not involve a judgment in its signification. It is also clear that *est*, since it is a verb, i. e. a *vox significativa*, signifies something. This last point emerges once more when St. Thomas comments on the translation which gives *ipsum est* instead of *ipsum ens*.

"For that no verb signifies a thing *to be* or *not to be*, he [Aristotle] proves by the verb EST, which stated in itself does not signify *something* to be, although it does signify *being*." [47] The composition (or affirmation) seemingly signified by this verb is had only when what it composes is stated. Then there can be truth or falsity. EST is said to consignify composition and not to signify it. It consignifies it because it is a verb: "For it signifies primarily that which falls upon the intellect in the manner of actuality in the absolute sense—since EST, absolutely speaking, signifies *to be in act*, and therefore it signifies after the manner of a verb." [48] The actuality prin-

ens nihil aliud est quam *quod est*. Et sic videtur et *rem* significare, per hoc quod dico QUOD, et *esse*, per hoc quod dico EST. Et si quidem haec dictio *ens* significaret *esse* principaliter, sicut significat *rem* quae habet esse, procul dubio significaret aliquid esse. Sed ipsam compositionem, quae importatur in hoc quod dico EST, non principaliter significat, sed consignificat eam inquantum significat *rem* habentem esse. Unde talis consignificatio compositionis non sufficit ad veritatem vel falsitatem: quia compositio, in qua consistit veritas et falsitas, non potest intelligi, nisi secundum quod innectit extrema compositionis."

[47] *Ibid.*: "Quod enim nullum verbum significat rem *esse* vel *non esse*, probat per hoc verbum EST, quod secundum se dictum, non significat *aliquid* esse, licet significet *esse*."

[48] *Ibid.*: "Significat enim primo illud quod cadit in intellectu per modum

cipally signified by this verb *is* or *exists* is generally the act of any form, whether it be substantial or accidental act. Thus, when we want to signify any form or act actually to be in (*inesse*) some subject, we do so by means of the verb *is*. Such actuality is signified *simpliciter* by the present tense, *secundum quid* by the other tenses.[49]

5. *Concluding Summary*

The foreging analysis indicates why one cannot agree with M. Gilson when he writes: "There is a point on which Aristotle and Thomas fully agree: taken alone, *is* means nothing."[50] What each man says is that *is* alone, like *being* alone, does not assert anything; that therefore neither *is* nor *being* signifies a judgment which would be true or false.

We may take it as shown, I think, that for St. Thomas there is a concept (*conceptus*) of being; that *being* is a term signifying a simple apprehension and not a judgment. If the latter were the case, *being* would signify something susceptible of truth or falsity. But this is clearly not the case. *What-is* (*id quod habet esse*), affirms nothing; but this is not to say that they mean nothing. Moreover, *is* is a significant term, if it were not a *vox significativa*, it could hardly be a verb.

Given these seemingly clear doctrines of St. Thomas, the position we examined earlier may seem merely capricious. However, as has already been indicated, it claims foundation in the texts of St. Thomas, particularly in the saint's exposition of the *De Trinitate* of Boethius. There St. Thomas writes:

> The first operation, indeed, regards the nature itself of the thing, accordingly as the thing understood obtains a certain grade in beings, whether it be a complete thing, or some certain whole, or an incomplete thing, such as a part or an accident.
>
> The second operation, however, regards the being itself of the thing, which indeed results from the collecting together of the principles

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actualitatis absolute: nam EST, simpliciter dictum, significat *in actu esse;* et ideo significat per modum verbi."

[49] *Ibid.*

[50] Gilson, *op. cit.*, p. 229.

of the thing in composite things, or accompanies the simple nature of the thing, as in the case of simple substances.[51]

This passage has been interpreted to mean that simple apprehension grasps essence alone, and that only in judgment is existence attained. In the light of our previous examination, it is clear that existence is not grasped by the first operation as it is by the second. In judgment, the mind asserts that a thing is or that it is such-and-such. We have already seen that the concept of being does not assert that anything is and that, although *being* means "that-which-has-existence," this *ratio* is the term of the operation called simple apprehension. So too the concept of substance (which is the *ratio propria entis*), i. e. that to which existence belongs *per se et non in alio*, does not assert the existence of any *res*. No more does the concept of existence (i. e. *esse in rerum natura, in actu esse*) assert that something exists. When it is said that the second operation of the mind, 'qua componit et dividit, respecit ipsum esse rei,' what is meant is that the mind can assert the composition only of what exists together *in rerum natura* and can assert the separation only of that which exists separately *in rerum natura* —if its judgments are to be true. By means of the first operation, it can consider one thing apart from another even when these could never exist apart. (That the mind does not have absolute freedom here, is shown at great length in the text in question.) In the case of the existential judgment, if existence were not first conceived, grasped as the term of the first operation of the mind as to what it is, no existential judgment would be possible.' What is composed in the affirmative enunciation which signifies the existential judgment, "Socrates is," is precisely Socrates and existence. The exposition of the *De Trinitate*, then, is certainly not teaching a different doctrine

[51] *In Boet. de Trin.*, q. 5, a .3, (ed. Wyser): "Prima quidem operatio respicit ipsam naturam rei, secundum quod res intellecta aliquem gradum in entibus obtinet, sive sit res completa ut totum aliquod, sive res incompleta, ut pars vel accidens. Secunda vero operatio respicit ipsum esse rei, quod quidem resultat ex congregatione principiorum rei in compositis, vel ipsam simplicem naturam rei concomitatur, ut in substantiis simplicibus."

from the texts examined above nor does it demand a logic other than that of Aristotle. The logic taught by St. Thomas, like his metaphysics, is most profitably sought in his commentaries on Aristotle. The hypothesis of a " personal " metaphysics of St. Thomas, an existential metaphysics, like the consequent hypothesis of an existential logic to fit the existential metaphysics, exhibits an unfortunate tendancy to derogate Aristotle in such a way that the obvious sense of the texts of St. Thomas is rapidly obscured and lost.[52] It remains true that the best way to imitate St. Thomas is to become, with him, a faithful disciple of Aristotle.

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[52] M. Gilson, in his essay, *Cajetan et l'existence,* makes this curious remark: " L'histoire de ce que l'on nomme commodément l'Ecole Thomiste n'a jamais été écrite. Nous ne prétendons donc pas la connaître, mais ce que nous en savons nous invite à penser que le principal obstacle à la diffiusion du Thomisme de saint Thomas, même à l'interieur de l'Ordre Dominicain, fut l'influence d'Aristotle. Cette assertion d'apparence paradoxale, étant donnée l'interpretation traditionelle de saint Thomas, est sans doute destinée à devenir une banalité dont on s'etonnera qu'il y ait jamais eu lieu de la dire." *Tidjschrift voor philosophie* (June, 1953), p. 284. Doubtless St. Thomas himself would not be the least of those who would find this assertion paradoxical. General statements about the relationship between the doctrine of Aristotle and that of St. Thomas, of course, can be tested only by particular cases—like that of the existential proposition.

INDUCTION IN ARISTOTLE AND ST. THOMAS

IN the article entitled "The 'Problem' of Induction" Joseph J. Sikora proposed to treat of "the various meanings which the term 'induction' may have," yet he specifically omitted any reference to the works of St. Thomas.[1] At the same time certain contemporary positions were put forward as though conceded, such as the supposition of two levels of intellectual knowledge, a "phenomenal" one and a "transphenomenal" one, permitting in turn two corresponding levels of induction, providing the principles for two sciences of nature: the "empiriological" and the "ontological." Induction on each of these levels was then divided into three: "abstractive," "ratiocinative" and "constructive." The first of these is a kind of intuition; the second, by contrast to the first, proceeds discursively from singulars; the third, by contrast with the second, represents an incomplete, rather than complete, enumeration. In all there are thus six types of induction on the intellectual level.

With regard to the first division, that of intellectual knowledge into "phenomenal" and "transphenomenal," with its resulting division of the science of nature into "empiriological" and "ontological," even its protagonists do not claim that such a dual concept of the science of nature is present in St. Thomas. Its merits over the concept of the science of nature as viewed by St. Thomas would seem to have still to be demonstrated, so far as any fruitful progress deriving therefrom is concerned. With respect to the division of the inductive process itself into three species—the "abstractive," the "ratiocinative," and the "constructive"—since the author does cite a passage from Aristotle as an illustration of the second species, an examination

[1] Joseph J. Sikora, "The 'Problem' of Induction," *The Thomist*, XXII (1959), January, pp. 25-36. This omission appears to be an application of the author's conviction that an adequate discussion of such matters cannot be found in St. Thomas himself.

of the text involved will show that it is actually an illustration of the inductive process leading to the self-evident principles mentioned under the first species. Finally, the second and third species will be seen to be distinguished, in the terms of Aristotle and St. Thomas, not on the basis of complete and incomplete enumeration, but simply on the basis of the necessary or merely dialectical status of the principles attained. As a result, the author has substituted a threefold division of induction where in Aristotle and St. Thomas there exists a single process of induction terminating in principles which will be, according to the matter, either necessary or dialectical. It is the purpose of the ensuing pages to set down in clear relief the inductive process as expounded by Aristotle and St. Thomas in order that its contrast with the version in question may be fully evident.

I. *The general description of induction in Aristotle and St. Thomas.*

Since it is so often customary, in logic books and elsewhere, to speak of the " inductive " and the " deductive " processes as though they were two mutually independent methods of arriving at the truth, it will perhaps not be amiss to underline the fact that in Aristotle and St. Thomas, as in thinking itself, the two processes are not separated and parallel, but complementary: the prerequisite of *deduction* are premisses arrived at by *induction*. This is expressed by Aristotle and St. Thomas when they state that the principle of the *syllogism*, or deductive reasoning, is a universal attained by induction. Thus Aristotle states:

> Now induction is the starting-point which knowledge even of the universal presupposes, while syllogism proceeds from universals. There are therefore starting-points from which syllogism proceeds, which are not reached by syllogism; it is therefore by induction that they are acquired.[2]

[2] *Ethics*, VI, 1139b 25. (Oxford translation.)

St. Thomas expounds this as follows:

> There is a twofold teaching from things known: one, indeed, through *induction;* the other, through *syllogism* [deduction]. Now induction is introduced in order to know some principle and some universal at which we arrive through experience of singulars, as is stated in *Metaphysics* I. But from the universal principles known previously in the aforesaid manner proceeds the syllogism.
>
> Thus, therefore, it is evident that there are certain principles from which the syllogism proceeds, which are not certified by syllogism—otherwise one would proceed to infinity in the principles of syllogism, which is impossible, as is proved in *Posterior Analytics* I. What remains, then, is that the *principle of the syllogism* is *induction.* But not any syllogism is teachable, i. e., causative of scientific knowledge, but solely the demonstrative syllogism, which concludes necessary things from necessary.[3]

Since the passage alluded to above by St. Thomas in *Metaphysics* I is the fundamental and basic passage in Aristotle on the inductive origins of our intellectual knowledge, to which St. Thomas often alludes, it is perhaps well to cite it in full:

> The animals other than man live by appearances and memories, and have but little of connected experience; but the human race lives also by art and reasonings. Now from memory experience is produced in men; for the several memories of the same thing produce finally the capacity of a single experience. And experience seems pretty much like science and art, but really science and art come to men *through* experience; for 'experience made art,' as Polus says, 'but inexperience luck.' Now art arises when from many notions gained by experience one universal judgment about a class of objects is produced. For to have a judgment that when Callias was ill of this disease this did him good, and similarly in the case of Socrates and in many individual cases, is a matter of experience; but to judge that it has done good to all persons of a certain constitution, marked off in one class, when they were ill of this disease, e. g., to phlegmatic or bilious people when burning with fever—this is a matter of art.[4]

In St. Thomas' exposition of this passage, the rise of art

[3] *In Ethicam Aristotelis,* VI, 1.3, no. 1148. (Italics added.)
[4] *Metaphysics* I, 980b 25. (Oxford translation.)

from experience, beginning with the words, "Now art arises . . .," is expounded as follows:

> Now the way in which art is produced from experience is the same as the aforesaid way, in which experience is produced from memory. For just as from many rememberings there is produced a single experiential science, so from many experiences there is produced the universal grasp of all similar cases. Whence art has this over and above experience: namely, that experience is concerned solely with singulars, while art is concerned with universals.
>
> Subsequently he (Aristotle) expounds this with an example, saying, "For to have a judgment that when Callias was ill . . .," for when a man has received into his knowledge that this medicine has benefited Socrates and Plato suffering from some certain sickness, and many other singulars—no matter what the thing is—this pertains to experience. But when someone receives into his knowledge that this benefits all in some determined kind of sickness, and according to some certain complexion—as that it has benefited those with fever, both the phlegmatic and the bilious—this already belongs to art.[5]

The next question that occurs, is, of course, the question of just what it is that enables the intellect to make the transition from the singulars of experience to the universal of art and science. Does it, for example, depend upon a *complete enumeration* of the singulars? This question is studied by Aristotle, and expounded by St. Thomas, at the very end of the *Posterior Analytics,* where Aristotle, after determining with regard to the principle of demonstration which is the middle term, proceeds now to a study of the manner in which those principles which are the first indemonstrable propositions are made known.[6] As previously in the *Metaphysics,* Aristotle arrives at the answer by tracing the degrees of knowledge up through the animals, first the imperfect, and then the perfect, then on to man, in

[5] *In Metaphysicam Aristotelis,* I, 1.1, no. 18-19. It will be noted here that St. Thomas, following Aristotle, is speaking, not of "art" in the restricted sense of universal knowledge ordained to making, but rather, since it is being compared with "experience" in the proportion of the *universal* to the *singular,* of "art" in the broad sense of *any* universal knowledge in contrast to the sensible knowledge of singulars on the plane of memory and experience.

[6] *Posterior Analytics* II, 99b 20 sq.

whom the experience derived from the memory of many occurrences is eventually transformed into that universal knowledge which is the principle of art and science. St. Thomas follows this description as before, and even appends once more the example of the memory of the singular cures of some certain sickness eventually evolving into universal knowledge on the subject:

> . . . From memory made many times concerning the same thing, yet nevertheless in different singulars, experience comes about, since experience is seen to be nothing other than to receive something from many things retained in the memory. But nevertheless experience requires some ratiocination about particulars, through which one is related to the other, which is proper to reason. For example, when someone remembers that a certain herb has many times saved many from fever, this is said to be experience that such a herb is curative of fever. But reason does not come to rest in the experience of particulars, but from particulars of which one has had experience, it grasps one common thing, which is confirmed in the soul, and considers it without the consideration of any of the singulars; and this common thing it takes for the principle of art and science.
>
> For example, as long as the doctor considered that this herb cured Socrates when in a fever, and Plato, and many other singular men, it is experience; but when his consideration rose to hold that this species of herb cured a feverish man absolutely, this is taken as a certain rule of the art of medicine. This, therefore, is what he (Aristotle) says, namely, that just as from memory experience comes about, or even further, *from the universal coming to rest in the soul* [" i. e., from the universal now stabilized in its entirety within the soul "], which, namely, is taken as being thus in all, as experience gives it to be in certain ones . . . from this experience, therefore, and from such a universal arrived at through experience, there is in the soul that which is the principle of art and science.[7]

Although the process of induction from singulars which has now been twice described is here invoked, not in connection simply with the attainment of any universal propositions whatever through the process of induction, but specifically with the attainment of those which cannot be arrived at in any other

[7] *Exposition of the Posterior Analytics,* II, 1. 20, no. 11. English translation of Librairie M. Doyon, Quebec.

way, namely, the *immediate first principles* from which all reasoning proceeds, and which cannot therefore themselves be the product of reasoning, nevertheless the process does apply to *any* propositions arrived at by induction, such as the one of the example: "Some certain herb will benefit all men of a certain complexion, suffering from some certain disease." Thus St. Thomas in his exposition mentions the extension of the inductive process as set down there by Aristotle:

> . . . He (Aristotle) distinguishes between art and science, as also in *Ethics* VI, where it is stated that art is the right reason of making things. And therefore he here says that if from experience there is arrived at something universal concerning generation, i. e., concerning any makeable things whatsoever, e. g., concerning curing or agriculture, this pertains to art. But science, as he there says, is concerning necessary things. And therefore if the universal is considered concerning those things which are always in the same way, it pertains to science, e. g., concerning numbers or figures. And this mode which has been stated applies to the principles of all the sciences and arts.[8]

In other words, since the principles of the various arts and sciences cannot be *deduced* from the absolutely first principles, such as, "Being is not non-being," "The whole is greater than the part," and others, necessarily the first principles of the arts and sciences, while presupposing the absolutely first principles, must likewise be attained through *induction* from experience. Such would be, for instance, as suggested in the examples of Aristotle, the principles used and followed in the art of medicine. The process of induction is the same, therefore, whether the principles or propositions in question are *absolutely* first and immediate, or whether they are "the primary immediate premisses" of the arts and sciences as Aristotle calls them, or universal propositions in general.

Referring to those which are first and immediate, in question in the *Posterior Analytics*, St. Thomas continues his exposition of Aristotle:

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[8] *Ibid.*

Whence (Aristotle) concludes that neither do the habits of the principles pre-exist in us, as though determinate and complete, nor do they come about completely fresh from some more known pre-existing habits, as there is generated in us the habit of science from the foreknowledge of principles; but the habits of principles come about in us from pre-existing sense.[9]

Aristotle and St. Thomas now come to the precise mode in which the sensible singular is metamorphosed into the intelligible universal. The latter is *not* the arithmetical sum of the former, but rather an intellectual vision which requires the repetition of a greater or lesser number of sensible singulars in order to bring it into focus. The likeness chosen by Aristotle is that of a battle in which, in the course of a rout, first one soldier, then another, makes a stand until there is a sufficient number to constitute a new unity, whatever might be the number that is required:

. . . He (Aristotle) gives an example in battles which are brought about by the turning back of an army overcome and put to flight. For when one of them will have made a stand, i. e., will have begun to stand immovably and not flee, another stands, adding himself to him, and afterwards another, until enough are congregated to bring about the beginning of a fight. Thus also, from sense and memory of one particular, and again of another and another, one sometimes arrives at that which is the principle of art and science, as has been said.[10]

This ability to grasp the universal is not within the domain of sense, is not a mere numerical addition, as already stated, but presupposes a power to grasp the universal in the singular, which sense does not have:

Someone might believe that sense alone or the memory of singulars might suffice to cause the intelligible knowledge of principles, as certain of the ancients laid down, not discerning between sense and intellect. And therefore, to exclude this, the Philosopher adds that along with sense it is necessary to presuppose a soul of a nature such that it is *able to undergo this,* i. e., which is susceptible of universal knowledge, which comes about through the *possible*

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[9] *Ibid.* [10] *Ibid.*

intellect, and again, which is *able to do this*, according to the *active* intellect, which makes things intelligible in act through abstraction of the universals from singulars.[11]

This universal which is grasped is some common characteristic found in the singulars, whether it pertains to the essence or not:

> For if many singulars are taken which are indifferent [i. e. similar] as to some one thing existing in them, that one thing according to which they do not differ, received in the mind, is the prime universal, whatever it is, whether, namely, it pertains to the essence of the singulars or not. For since we find Socrates and Plato and many others to be indifferent [i. e. similar] as to whiteness, we arrive at this one thing, namely, white. And likewise because we find Socrates and Plato and others to be indifferent [i. e. similar] as to rationality, this one thing in which they do not differ, namely, 'rational,' we take as the universal which is [specific] difference.[12]

That this is so, namely, that the universal arrived at by induction need not be of the essence of the thing, is clear from the fact that we attain through induction from the senses universal ideas of such things as 'red' or 'hot' or 'wet' from things to which these characteristics need not pertain essentially, but only accidentally. How is this able to be so? It is able to be so because *immediately*, in the very *first* sensible experience, the intellect has *already* begun to perceive the universal. In other words, it is a faculty which by nature perceives the universal, in all that it perceives, and therefore does so in even *one* sense experience, no matter how dimly. In effect, if this were not the case, if the intellect did not perceive the universal from the start, how could the sense knowledge which did not evoke the universal in the beginning, evoke it in some later experience? What could the simple *addition* of singulars have added, if the sensible singular *as such* was not penetrable by the intellect on the universal plane? Therefore, if the mind does indeed perceive the universal, it does so *from the start*, first obscurely, then more and more clearly, as Aristotle de-

[11] *Ibid.*, no. 12. (Italics added.)
[12] *Ibid.*, no. 13.

scribes in the beginning of the *Physics,* in a passage to which St. Thomas often refers.[13]

Returning, however, to the passage at hand, one finds St. Thomas elaborating on this immediate grasp of the universal by the intellect. As stated by Aristotle, "When *one* of a number of logically indiscriminable particulars has made a stand, the *earliest* universal is in the soul: for though the act of sense-perception is of the particular, its content is universal —is man, for example, not the man Callias."[14] St. Thomas expounds this as follows:

> How this one thing can be arrived at he manifests subsequently. For it is plain that thesingular is sensed *properly* and *per se;* but nevertheless sense is, in a certain way, of the universal. For it knows Callias not only as he is Callias, but also as he is 'this man,' and likewise Socrates as he is 'this man.' And thence it is that when such a grasp of the sense pre-exists, the intellective soul can consider 'man' in both.
>
> But if it were such that the sense apprehended only that which was of a particular nature, and in no way apprehended with this the universal nature in the particular, it would not be possible that from the apprehension of sense there should be caused in us the knowledge of the universal.
>
> And he manifests this same thing subsequently in the process which is from species to genus. Whence he adds that again in those things, namely, in man and horse, the soul persists in its consideration until it arrives at something indivisible in them, which is the universal. For example, we consider this animal and that, e. g., man and horse, until we arrive at some common animal which is the genus, and in this we do the same until we arrive at some superior genus [i. e. ultimately the category of substance]. Since therefore we attain the knowledge of universals from the singulars, he concludes that it is necessary for the first universal principles to be known through induction. For thus, namely, by the way of induction, sense brings about the universal within the soul, inasmuch as all the singulars are considered.[15]

From the above it is clear that the universal, and the uni-

[13] Cf. *In Physicam Aristotelis, I,* 1.1, no. 6 sq.
[14] *Posterior Analytics,* II, 100a 15. (Italics added.)
[15] *Ibid.,* no. 14.

versal propositions attained by induction, do *not* come about by an experience of *all* the sensible singulars of which the universal is true—and which are, incidentally, infinite, in the sense of indefinite addition—since already in the *first* experience the universal has begun to be present. One does not wait until the last experience of a given species, which, moreover, need not ever come in the knower's life-span. How, likewise, could one arrive at the universal idea of 'being' by induction, as indeed one does, if it were to entail a complete enumeration of all the singulars?

In distinction to the example of induction given by Aristotle in the *Metaphysics*, how could one ever apply *any* remedy if a universal proposition concerning it entailed first a numerical review of *all* possible cases—which would increase indefinitely in the future beyond any present computation? The answer is, of course, that the grasping of the universal, present in *every* individual, does not require the enumeration of *all*, but only of a number sufficient to actualize the intellect—a number proportionate, not to the number of singulars, but to the complexity and remoteness from matter of that which is grasped, since the mind begins from things which are better known *to us*, i. e., closer to the senses, and more general in nature, the transition of the mind from potency to act being extended in the transition from the generic to the specific, as explained in the beginning of the *Physics*. (Exactly the same matter is covered by St. Thomas, incidentally, in *Summa Theologica* I, q. 85, a. 3. —"Whether more universal things are prior in our intellectual knowledge.")

The absolute basicness of the inductive process, from sense knowledge up through memory and experience to the ultimate grasp of the universal, may be seen from the fact that St. Thomas cites it once more in speaking of the acquisition of the absolutely first principle of demonstration, the principle of contradiction: "It is impossible for the same to be and not be in the same at the same time, and in the same respect." Thus he describes its acquisition as follows:

For it is by the natural light itself of the agent intellect that the first principles are made known—nor are they acquired through reasonings, but solely through the fact that their terms are made known.

This, indeed, is produced by the fact that from sensible things memory is received, and from memory experience, and from experience the knowledge of the terms in question. Once they are known, there are known those common propositions which are the principles of the arts and sciences.

. . . [The requisites of the most firm principle belong] to this principle as to the most firm, which states that 'It is impossible for the same both to be and not be in the same [i. e., be predicated and not be predicated of the same] at the same time,' but there should also be added, 'and in the same respect.]' . . .[16]

This principle is the first of all, to which all demonstrations resolve their propositions:

It does not happen therefore that anyone should lie internally concerning these things, and that he should believe the same to be and not be at the same time. And because of this, all demonstrations reduce their propositions to this proposition, as to the ultimate belief common to all: for it is naturally the principle and dignity [axiom] of all dignities.

. . . Since there is a twofold operation of the intellect—one by which it knows what something is, which is called 'the understanding of indivisibles;' the other by which it composes and divides—in both there is something first. In the first operation, indeed, there is some first thing which falls upon the conception of the intellect, namely, that which I call 'being'—nor can anything be conceived by the mind in this operation unless 'being' is intellected.

And since this principle, 'It is impossible to be and not be at the same time,' depends upon the understanding of 'being,' as does that principle, 'The whole is greater than its part,' upon the understanding of 'whole' and 'part,' therefore this principle likewise is naturally first in the second operation of the intellect, namely, of the intellect composing and dividing. Nor can anyone according to this operation of the intellect understand anything, unless this principle be understood. For just as 'whole' and 'parts' are not understood unless one understands 'being,' so neither is this principle, 'The whole is greater than its part,' unless one has understood this aforesaid most firm principle.[17]

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[16] *In Metaphysicam Aristotelis*, IV, 1.6, no. 599-600.

[17] *Ibid.*, nos. 603, 605.

From all this it is evident that there are not many and varied ways of arriving at first principles, at the "first immediate premisses," but *one* way, namely, through induction from sense knowledge. Such principles are 'immediate,' i. e., requiring no middle term to enable the predicate to be predicated of the subject; they are 'self-evident,' or *per se nota,* i. e., known to be true when their terms are known, whether it is a case of terms known to all, or only to the initiate; they are 'indemonstrable,' i. e., deriving not from demonstration through higher premisses, but through induction. In the process of knowing these principles, one proceeds, as likewise in the subsequent syllogism from the 'known' to the 'unknown.' There are, however, two types of 'known': that which is better known *in itself,* i. e., that which has more being, and is consequently less material or totally immaterial; and that which is better known *to us,* namely, sensible singulars. It is from things better known *to us* that one proceeds in induction, i. e., from sensible singulars:

> . . . Singulars are prior to us, and posterior absolutely, while the converse holds true of universals. This is the way in which induction makes something known, in another way than demonstration. For demonstration proceeds from things absolutely prior, induction from things prior as to us.[18]

The indispensability of all intellectual knowledge arising from this induction from sensible singulars is unequivocal:

> . . . Demonstration proceeds from universals, induction from particulars. If therefore the universals from which demonstration proceeds could be known without induction, it would follow that a man would have the science of those things of which he does not have sense knowledge. But it is impossible to contemplate universals without induction. And this is more manifest in sensible things because in them, through the experience we have of singular sensibles, we arrive at universal knowledge, as is shown in the beginning of the *Metaphysics* [in the classic passage already cited]. . . . Even those things which are according to abstraction, are made known through induction, since in every genus of abstract

[18] *Exposition of the Posterior Analytics,* I, 1.8, no. 4.

things there are certain particulars which are not separable from sensible matter, accordingly as each is this particular thing. For although line is said according to abstraction, nevertheless this particular line which is in sensible matter, in so far as it is individuated, cannot be abstracted, because its individuation is from this matter. But the principles of abstract things, from which demonstration proceeds in these matters, are not manifested to us except from certain particulars which we perceive through the senses. Thus the universals from which demonstration proceeds are made known to us only by induction.[19]

This going from the 'known' to the 'unknown,' from singulars to the universal, which is induction, is *not* a syllogism. Why not? It is not because while the latter concludes with necessity, the former does not:

> . . . It is the same in the way of division [used in obtaining definitions] as in the way of induction. For he who induces through singulars to the universal, does not demonstrate nor syllogize with necessity.
>
> . . . He (Aristotle) has quite fittingly compared division to induction. For in both cases it is necessary to suppose that all things have been taken which are under something common, otherwise neither could the one inducing conclude to the universal from the singulars taken, nor could the one dividing, from the removal of certain parts, conclude to the other [part of the division].[20]

II. "*The syllogism from induction*" *does not differ from induction properly so called.*

What is meant when Aristotle, in the *Prior Analytics,* speaks of "the syllogism which springs out of induction"?[21] The answer is simple: the process described is not a genuine syllogism. It cannot be, since "the syllogism through induction" concludes by definition to an *immediate* proposition, which is impossible in the case of a genuine syllogism; which must by definition arrive at a *mediate* proposition, supposing

[19] *Op. cit.,* I, 1.30, no. 4-5.

[20] *Op. cit.,* II, 1.4, no. 3-4.

[21] *Prior Analytics,* II, 68b 15. The passage in question is that cited by Prof. Sikora in his article, p. 28, in support of a "ratiocinative," in addition to an "abstractive" or intuitive, induction.

a middle term in the premisses. That such a " syllogism which springs out induction " does so conclude to an *immediate* proposition is had in Aristotle's own statement at the conclusion of the passage: " Such is the syllogism [i. e., 'the syllogism through induction,'] which establishes the first and immediate premiss." [22]

What, in effect, is the nature of this " syllogism through induction "? In the words of Aristotle:

> (It) consists in establishing syllogistically a relation between one extreme and the middle by means of the other extreme, e. g., if B is the middle term between A and C, it consists in proving through C that A belongs to B.

In other words, it consists in establishing the *immediate* premiss AB by means of induction through cases of C. Thus he continues, " For this is the manner in which we make inductions."

The example which Aristotle cites to illustrate his point is as follows:

> . . . Let A stand for long-lived, B for bileless, and C for the particular long-lived animals, e. g., man, horse, mule. [Here it should be noted that by ' particular ' is plainly meant not *sensible singular,* but a *species.*]

Since to be long-lived belongs to all the long-lived animals,

> A then belongs to the whole of C. [This may be expressed as: " Every C is A."]
>
> At the same time, to be bileless belongs to all these animals: . . . B also belongs to all. [This may be expressed as: " Every C is B."]

Subsequently, supposing C and B to be convertible, which means that B may not extend to more elements than C—as would be the case, for example, if B, bileless, were true of more species of animals than those named under C, the particular long-lived animals—then it is possible to state like-

[22] *Ibid.,* 68b 30. This final line is not included in the passage cited by Prof. Sikora.

wise: " Every B is C." One now has a syllogism in the First Figure allowing one to conclude: " Therefore every B is A." As stated by Aristotle:

> If then C is convertible with B, and the middle term [B] is not wider in extension, it is necessary that A should belong to B. [One has established, then, the immediate premiss AB, " Every bileless animal is long-lived."]

This is the process of which Aristotle states, " Such is the syllogism which establishes the *first* and *immediate* premiss." Why is the premiss AB, " Every bileless animal is long-lived," an *immediate* premiss? It is so because A is not immediately related to C, i. e., the characteristic, " long-lived " (A), is not immediately true of " the particular long-lived animals " (C), but rather is true of them through B, " bileless." In other words, " the particular long-lived animals " are not long-lived because they are, for example, " man, horse, mule," but rather because they are all B, " bileless ": it is the fact that all these species of animals are bileless, which enables " long-lived " to be predicated of them. Thus, C is not the middle between A and B, but rather B is the middle between A and C—and consequently, is *immediately* related to A. For this reason, the term of the inductive process here described is *not* that of a syllogism, but simply of the classical inductive process already described by Aristotle in the first lines of the *Metaphysics* and the last lines of the *Posterior Analytics*. In effect, in the passage now in question, Aristotle, after designating this as the " syllogism which establishes the first and immediate premiss," goes on to say:

> . . . For where there is a middle term the syllogism proceeds through the middle term; when there is no middle term, through induction.
>
> And in a way induction is opposed to syllogism: for the latter proves the major term [A] to belong to the third term [C] by means of the middle [B]; the former proves the major [A] to belong to the middle [B] by means of the third [C].
>
> In the order of nature, syllogism through the middle terms is

prior and better known, but syllogism through induction is clearer to us.[23]

In the passage just cited, one has all the necessary elements of this syllogism which is not a syllogism, namely, the " syllogism through induction." In effect, in the first line Aristotle does indeed refer to this process of arriving at the first immediate premiss, " when there is no middle term," as a " syllogism through induction." In the second line, he shows that this is not a univocal use of the word 'syllogism,' but only an analogy: ". . . In a way induction is opposed to syllogism." In the third line, he states the root of the difference: Syllogism through a middle term follows the " order of nature," while syllogism through induction follows that which is " clearer to us."

What is it that is " clearer to us "? Obviously it is the *sensible singulars,* which are prior and better known *as to us,* as against the *intelligible universals* which, proportionately to their actuality and separation from matter, are better known *in themselves.* Yet *both* processes are absolutely indispensable to us, since we cannot proceed from that which is better known *in itself,* and in the order of nature, unless we first arrive at it from that which is better known *as to us*: we cannot proceed from universals, until we have first attained those universals from singulars.[24]

Since the inductive process of arriving at universals is a prerequisite to the deductive process of concluding from universals, one finds oneself in the predicament of holding for a *circular demonstration* if one calls both of them syllogisms or demonstrations. In effect, should one inquire, " How does the syllogism proceed? " and the answer be, " From immediate

[23] *Loc. cit.,* 68b 30 sq.

[24] " The natural way of doing this (i. e., of arriving at the principles of a science) is to start from the things which are more knowable and obvious to us and proceed towards those which are clearer and more knowable by nature; for the same things are not 'knowable relatively to us' and 'knowable' without qualifications. . . . We must follow this method and advance from what is more obscure by nature, but clearer to us, towards what is more clear and knowable by nature." *Physics* I, 184a 15 sq. (Oxford translation)

premises," and one then ask, " How are the immediate premisses obtained? " and one receive the answer, " From syllogism," one has indeed a circular demonstration: Immediate premisses are the principles of the syllogism, and the syllogism is the principle of the immediate premisses. This difficulty is solved, of course, simply by making clear that the latter, or inductive, process, is not really a syllogism, but simply resembles one under the aspect of establishing one thing from another, in the broad sense of " a discourse in which certain things being stated, something other than what is stated follows of necessity from their being so." [25] This difficulty in terminology is encountered by Aristotle precisely where he is speaking of that requisite for demonstration which is the *immediate premiss,* and of which he says: ". . . Knowledge of the immediate premisses is independent of demonstration." [26] If one should speak strictly of " demonstrating " the immediate premisses, one would be confronted with those premisses being both prerequisite to demonstration and the result of demonstration. But ". . . the same things cannot simultaneously be both prior and posterior to one another; " consequently, the semblance of a circular demonstration may only be allowed provided it be made clear that " demonstration " of the immediate premisses, is not the same as the demonstration of the conclusion from those premisses:

> . . . So circular demonstration is clearly not possible [i. e., not allowable] in the unqualified sense of ' demonstration,' but only possible if ' demonstration ' be extended to include that other method of argument which rests on a distinction between truths prior to us and truths without qualification prior, i. e., the method by which induction produces knowledge.
>
> . . . Perhaps . . . the second form of demonstration, that which proceeds from truths better known to us [i. e., induction], is not demonstration in the unqualified sense of the term.[27]

St. Thomas, in expounding this passage, agrees with Aristotle

[25] Aristotle's definition of the syllogism in *Prior Analytics* I, 24b 15.
[26] *Posterior Analytics,* I, 72b 15 sq.
[27] *Post. Anal.,* I, 72b 25 sq.

that in speaking of two types of " demonstration "—or " syllogism "—in this case, one finds oneself with the alternative either of admitting that the definition of demonstration as from the prior and better known *absolutely* is faulty, if one wishes to speak also of a " demonstration " from that which is prior and better known *to us* (i. e., induction); or else of considering the latter type of demonstration, a " demonstration "—or " syllogism "—in name only:

> For it was said that *to know scientifically* is *to know the cause* of a thing. Therefore it was shown that a demonstration which causes scientific knowledge, must proceed from things that are absolutely prior.
>
> If, however, a demonstration could at one moment proceed from things prior absolutely, and at another, from things prior to us, it would be necessary that *to know scientifically* not only mean to know the cause of a thing, but would be said *in twofold way*—because there would also be a kind of science through posterior things.
>
> It is either necessary to say this, or that the other demonstration which is made from things better known to us, is not a demonstration absolutely speaking.[28]

III. " *Complete enumeration of the particulars* " *refers to species, not sensible singulars.*

Granted that the process of induction whereby one arrives at the first immediate premisses is not, since it does not proceed through a middle term, a syllogism in the formal sense of the word, there remains the question of just how it *does* arrive at the immediate premisses. Specifically, is it through a complete enumeration of all the singulars? Indeed, Aristotle states in the passage of the *Prior Analytics* where the " syllogism through induction " is described, and the various long-lived animals are used to establish the immediate premiss that the bileless animals are long-lived:

> . . . we must apprehend C [' the particular long-lived animals,

[28] *Exposition of the Posterior Analytics,* I, 1.8, no. 4.

e. g., man, horse, mule] as made up of all the particulars. For induction proceeds through an enumeration of all the cases.[29]

How, then, is one sure to have included all the particulars? Is it by counting them? Plainly it is not, since none of the inductions which men make from their knowledge of sensible things, including the example which Aristotle gives in the beginning of the *Metaphysics,* is based upon an enumeration of *all* the individual cases. Thus the premisses upon which people are now given polio shorts are not based upon a test of this remedy on *all* polio cases, a condition which would be clearly impossible. On the other hand, men continue to make inductions, and do so by their very nature, and—provided due precautions are taken, which do *not* include the enumeration of all the singulars—do so successfully.

That universal propositions are not based upon a counting of the singulars is made clear by Aristotle in the very beginning of the *Posterior Analytics* when speaking of the foreknowledge of the principles which is required in demonstration: this universal knowledge is not of all those merely that *one has come to know* (as would be the case if the universal were based upon enumeration of singulars), but of all *absolutely*:

> For no premiss is ever couched in the form 'every number which you know to be such,' or 'every rectilinear figure which you know to be such': the predicate is always construed as applicable to any and every instance of the thing.[30]

Thus, when speaking of the "particular long-lived animals, e. g., man, horse, mule," and saying that they are all long-lived, one does not mean "all the men and horses and mules *which I know to be such,*" but "men, horses and mules in any and every instance."

This leads one to recognize that induction, admittedly natural and successful, is based upon something else—and what that is is stated by Aristotle at the end of the *Posterior Analytics,* and has already been stated above, namely, the power of the *intellect,* in contrast to *sense,* to be able to grasp

[29] *Prior Analytics,* II, 68b 25. [30] *Posterior Analytics,* I, 71b.

the universal nature of a thing already from the very first sense perception:

> The soul is so constituted as to be capable of this process [whereby the universal becomes 'stabilized in its entirety within the soul'].
>
> . . . When *one* of a number of logically indiscriminable particulars has made a stand, the *earliest universal* is present in the soul: for though the act of sense-perception is of the particular, its content is universal—is *man*, for example, not the man *Callias*.[31]

The examination of singulars, therefore, need continue, not until all are counted (which is impossible, since one cannot count, for example, those yet to be), but solely until, as St. Thomas says, "from the universal coming to rest in the soul, which, namely, is taken as though it was thus in all, as it is experienced in certain ones . . . there is in the soul that which is the principle of art and science."[32] This may take place, as in the case of the elements of the most principles, after a single experience; or in the case of things which are merely probable, only after many.[33] Thus, even the self-evident propositions, the first immediate premisses, to the establishment of which the induction described by Aristotle in the *Prior Analytics* is ordained—it "establishes the first and immediate premiss"—are not all equally evident to us, but some require more study. Hence the distinction between things self-evident to all, and things self-evident to the wise. St. Thomas expounds this division of what Aristotle calls "an immediate basic truth" as follows:

> To understand this division it is necessary to know that any proposition, whose predicate is of the nature of the subject, is *immediate* and *self-evident* in itself.
>
> But the terms of some propositions are such that they are known to all, such as *being* and *one*, and other properties of being as such: for being is the first concept of the intellect. Whence it is necessary

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[31] *Posterior Analytics*, II, 100a 10 sq. (Italics added.)

[32] *Exposition of the Posterior Analytics*, II, 1.20, n. 11.

[33] Cf. *Summa Theol.*, I, II, q. 51, a. 3: "Utrum per unum actum possit generari habitus."

that such propositions, not only *in themselves,* but *with respect to all men,* be held as self-evident. Such are: *The same thing cannot be and not be,* and *The whole is greater than its part,* and others like them. Whence it is that all the sciences receive these principles from metaphysics, to which it belongs to consider *being* absolutely, and those things which belong to being.

Other propositions are immediate, but whose terms are not known to all. Whence, although the *predicate* is *of the nature of the subject,* nevertheless since the definition of the subject is not known to all, it is not necessary that such propositions be conceded by all. For example, this proposition, *All right angles are equal,* is of itself self-evident or immediate, since equality enters into the definition of a right angle.[34]

Granted, then, that in induction the attainment of the universal depends not upon the mathematical addition of the singulars, but rather upon the amount of penetration required by the intellect, greater or less as the case may be, depending upon the universal's intelligibility *quoad nos,* as to us, what then of Aristotle's statement: " But we must apprehend C as made up of all the particulars " ? This may be clarified by asking what " particulars " Aristotle means. It has already been made clear that in aiming at universal premisses, one does not intend, in speaking of a given species, to restrict oneself solely " to those one knows to be such," but " to any and every instance of the thing." Consequently " C " (in this case, the particular long-lived animals, e. g., man, horse, mule), is *by definition* made up of all the singulars, whether known or not, of each species mentioned. Why, then, the warning of Aristotle? It plainly seems to be indicated not as directed towards the completion of the particular *singulars* in the species, but rather as directed toward the completeness of the particular *species* as parts of a given " indivisible " genus. In other words, the induction will not be complete, and consequently the premiss arrived at will not be immediate, if one has omitted some of the *species* of which the first term, " A " (in this case, " long-lived ") is true, and which might *not* be bileless, or " B." In this case, the requirement, " C is convertible with B," is not

[34] *Posterior Analytics,* I, 72a 10 sq. (St. Thomas, I, l. 5, no. 7).

fulfilled, since even though all the long-lived species of animals *mentioned* may be bileless, nevertheless, conversely, the bileless animals are not all the long-lived species.

One might give a more contemporary example in terms of the nature of tranquillizing drugs. Thus, let it be supposed that a certain number of patients took the drug, "Serpasil," and all improved. One would be inclined to attribute this to "Serpasil" as such, and to state as an immediate proposition, "All mental patients taking 'Serpasil' improve." This would correspond to saying, "All the bileless animals are long-lived." But just as in the first case, if the bileless animals did not represent *all* the species of long-lived animals, but there were also certain species which were *not* bileless but nevertheless long-lived, the long-lived animals would not be long-lived because they were bileless, even though *all* the bileless might be long-lived. So too in the second case, supposing that the mental patients who took "Serpasil" did not represent *all* mental patients who improved, but there were also certain similar patients who took some other drug, *not* "Serpasil," yet nevertheless improved, then the reason for improvement would not be "Serpasil" as such, but some common element "X," common to all the species of drugs producing the same improvement, including, of course, "Serpasil." The immediate proposition would therefore be: "All mental patients taking drugs containing 'X' improve." [35]

[35] That the standard form of induction as illustrated by Aristotle in the beginning of the *Metaphysics* falls into the form of the so-called "syllogism which springs out of induction," may be seen by substituting the elements employed in the former in the form of the latter. Thus, let "Callias" and "Socrates" be C (similar to "the particular long-lived animals, man, horse, mule") and "phlegmatic or bilious people when burning with fever" be B (similar to "bileless"), and "this (certain remedy) did them good" be A (similar to "long-lived"). Then supposing "Callias" and "Socrates" and other singulars eventually to stand adequately for a whole category, one will predicate A of B: "All phlegmatic or bilious people when burning with fever will be done good by this (certain remedy)." As may be seen, in order for A to be *immediately* true of B, it is necessary that the remedy in question be peculiar to "phlegmatic or bilious" people. If it is actually efficacious with *other* types also, then under C one has not had "an enumeration made up of all the particulars," and one has not the case where "C is convertible with B, and the middle term [C] is not wider in extension."

Thus, in making an induction one must be careful not to identify with a *part* (or particular species), that which is actually true of the whole: the attribute, as Aristotle says, must be "commensurately universal."[36] It must not only belong "to every instance of its subject" (*dici de omni* and *dici per se*), as improvement was true of all those who took "Serpasil," but it must belong "to every instance essentially and as such" (*dici ut universale*), which is not the case with "Serpasil," since improvement was not true of "Serpasil" as "Serpasil," but of a whole genus "X" of drugs, of which "Serpasil" was one species. The same would be true if one were to attribute 'to have its angles equal to two rights angles' solely to the *isoceles* triangle. Such an attribution would be true and necessary, yet *not* immediate—since the property inheres in isoceles not *qua* isoceles, but *qua* triangle: it is because the isoceles is a *triangle* that the attribute is true of it. The attribute adheres, therefore, in 'triangle' immediately, in 'isoceles triangle' mediately. As Aristotle states:

> . . . The subject which the demonstrator takes as a whole is really only a part of a larger whole; for then the demonstration will be true of the individual instances within the part and will hold in every instance of it, yet the demonstration will not be true of this subject primarily and commensurately.[37]

In the same vein, where, through induction one arrives at a principle such as that a certain remedy will do a *whole category* of people good, one would still have to be careful to consider whether this whole category might not be only a part of a still larger category. Thus remedies discovered in connection with one specific disease have often turned out to have a still wider extension than one expected. One who was careful to ask himself whether he had considered "all the particulars" in this sense, whether he had 'enumerated all the cases," would be on the look-out for such a possible "extension of the middle term."

[36] *Posterior Analytics*, I, 73b 25 sq.
[37] *Loc. cit.*, 74a 5.

IV. *Inductive propositions are not divided basically according to "complete or incomplete enumeration," but according to "necessary or probable."*

As has been seen, the question of "complete enumeration of particulars" in the text of Aristotle does not refer to a complete counting of the *sensible singulars,* which are in fact potentially infinite. Thus no acceptance of a remedy, no establishment of a physical law, is based on any such counting. Rather, enough cases are examined for "the universal [to be] stabilized in its entirety within the soul," as Aristotle states and as practice confirms. Consequently the universal is not stated as composed of all the cases one has counted, but as of every case of the thing absolutely.[38] The universal thus found, however, may not be *necessarily* true but may have only *probability,* in that, while being applicable effectively to all cases encountered, it has not been demonstrated to be the *exclusive,* and therefore necessary, solution. Such a probable principle corresponds to what is called a 'scientific hypothesis.' A case of this is had in the "supposition" (which word is simply the Latin-derivated word corresponding to the Greek-derivated word 'hypothesis') of Eudoxus to explain the motions of the planets, described by St. Thomas in his Exposition of the *De Caelo.*[39] Why does St. Thomas say there that "although, on the basis of such suppositions, the appearances are saved, one cannot nevertheless, for that reason state these suppositions to be true"? The reason is that the apparent motions of the planets are not seen as having necessarily to be explained *only* by the "construction" or "hypothesis" of Eudoxus. His explanation was not such as to exclude all others. St. Thomas saw that there might be others, and therefore did not commit himself to the theory of Eudoxus, any more than to that of

[38] "For no premiss is ever couched in the form 'every number which you know to be such,' or 'every rectilinear figure which you know to be such': the predicate is always construed as applicable to any and every instance of the thing." *Posterior Analytics,* I, 71b.

[39] *In De Caelo,* II, 1.17, no. 451. Reproduced in "Review Article," *The Thomist,* XXII (1959), January, p. 94.

Ptolemy, " since perchance the appearance with regard to the stars may be saved in some other way, not yet comprehended by man."

What is the point of such conjectures from the point of view of truth, if one proceeds in such a purely tentative way, merely trying to explain appearances by theories which one does not necessarily know to be true? The point is that this is the basic inductive process, in which the " appearances " to be explained are the singulars from which one begins. Such conjectural, tentative, exploratory thinking, connatural to a being which does not see the whole truth immediately but attains to it step by step, is precisely what St. Thomas calls the *via inventionis,* the " way of discovery," and which is a prelude to the *via resolutionis* or *via judicii,* the " way of resolution," or " judgment," in which the tentative answer, the " hypothesis," if it has passed the first test of " explaining the appearances," must now pass the supreme test, for acceptance as necessarily true, of being recognized as not being able to be otherwise, of being the only possible solution. Until that is done, and unless it is done, the solution remains ' dialectical,' i. e., being such as not necessarily to exclude any other solution.

It might be noted here that the very procedure of explaining the appearances of the motions of the planets in a conjectural way saving the appearances and which played an integral part in scientific research for St. Thomas, as the *via inventionis,* is no different than explaining the lines in the spectrum of hydrogen by the Bohr model of the atom today. There is a difference in size, but no difference in procedure. That this is so may be seen by the fact that not only do those who study St. Thomas' philosophy of nature as it is, find no need to make a new mental adjustment in order to understand the mode of operating of modern science; but neither does the modern scientist have to learn a new vocabulary and a new outlook in order to understand the position of St. Thomas.[40]

[40] St. Thomas not only mentions the system contrived by Eudoxus at the behest of Plato, but also the subsequent system involving eccentrics and epicycles, evolved by Hipparchus and Ptolemy, and gives this also as a system which, while saving

Following the sequence of Aristotle, it is only *after* one has made the transition from that which is probable to that which is necessary, that one must be sure to apprehend that of which some necessary property is predicated, " as made up of all the particulars," i. e., subject and predicate must be " commensurately universal," the subject must not represent only a *part* of that of which the predicate is necessarily true, as in the case of certain curative properties being attributed to one species only of a drug which are actually true of a whole genus. Thus Artistotle defines successively " an attribute ' true in every instance of its subject,' an ' essential " attribute, and a ' commensurate and universal ' attribute.[41] Speaking of errors in this final respect, Aristotle names one as " when the subject which the demonstrator takes as a whole is really only a part of a larger whole; for then the demonstration will be true of the individual instance within the part and will hold in every instance of it, yet the demonstration will not be true of this subject primarily and commensurately and universally."[42] This is the error, to avoid which, one must be sure to have a " complete enumeration " of the parts or species in question. (It should be mentioned that the need to comprehend all the particular species in the whole to which the predicate is related would apply to inductions terminating in probability as well as those terminating in necessary relations.)

the appearances, and thus having probablility, does not attain to an exclusive necessity: ". . . In astronomy there is posited the explanation of excentrics and epicycles on the basis that, this supposition having been made, the sensible appearances with regard to the heavenly bodies may be saved. Nevertheless this explanation is not sufficiently probative, since possibily they might also be saved on the basis of some other supposition." *Summa Theol.*, I, q. 32, a. 1, ad 2. ". . . Hipparchus and Ptolemf contrived (*adinvenerunt*) the movements of eccentrics and epicycles, in order to save those things which appear to the senses iin the heavenly bodies. Whence this is not a demonstration, but a certain supposition." *In De Caelo*, I, 1.3, no. 28.

[41] *Posterior Analytics*, I, 73a 25. Cf. St. Thomas, *In Post. Anal.*, I, ll. 9-12

[42] *Loc. cit.*, 74a 5.

V. *Summation*

By way of summation, one may see that the inductive process whereby one arrives at the immediate premisses which are the first principles of the individual arts and sciences, and that by which one arrives at the common principles of all, are not two—the one distinguished by " syllogism," the other by " intuition "—but one, in which the " syllogistic " procedure of going from the singulars to the universal is culminated, not after a certain numerical total, but at the moment when the intellect, going from potency to act, from the confused to the distinct, adequately grasps the universal already present to a degree from the first sense impression. At the same time, this process which leads to the *certain* and *immediate* premisses which are the common first principles and the principles of the arts and sciences, is the same process which also leads to the *dialectical* premisses which distinguish much of the reasoning, for example, in moral and physical matters, the latter being the domain of modern science.[43] This latter category would include universal premisses which were not even known to be true—as in the case of Eudoxus' theory of planetary motion which St. Thomas mentions. (One might mention that it is perfectly possible for some theory actually to be true, but simply not yet known to be such, as in the case of the Copernican theory when only in the state of a tentative solution not yet verified by extensive observations. In an intermediate state it may contain both true and not-true elements, as the Copernican theory, from its heliocentric aspect, was shown to correspond to the data of the senses, but as envisioning the planetary orbits as circles rather than ellipses, was still not wholly in conformity with the facts. Hence there can be a gradual progression from the *dialectical* to the *scientific* stage as more and more truth is ascertained. In the meantime, error must be avoided by not

[43] " The manner of demonstration [in the sciences] is diverse—for some demonstrate with greater necessity, as do the mathematical sciences, while others 'less cogently,' i. e., not with necessity, as do the natural sciences, in which many demonstrations are taken from those things which are not always inherent, but for the most part." *In Meta.*, VI, l. 1, no. 1149.

making the mistake of accepting an element not yet proved, as already certain, or the dialectical for the scientific. As already stated, some of the dialectical elements may turn out to be not true at all, as in the case of the supposition of circular orbits.)

Why trifle with hypotheses which, by definition, need not be true? The answer is simply that one does not know initially whether they are true or not. Something which would be clearly impossible, i. e., *not able to be*, would obviously be excluded. What remains are those things which, while not known as necessarily having to be, are known as, or are thought to be, *able to be*. If one establishes one such an hypothesis as being impossible, by virtue of its being contradicted by subsequent facts, then one has moved closer, by a proces of elimination, to an eventual solution—just as one also defines by division, in which the negation of one member leads to the affirmation of the other. On the other hand, as is well known, practically all hypotheses eventually perceived as being true, originally began in the purely conjectural, dialectical state of the *via inventionis*—" preparing the way," as St. Thomas says, " through probable reasons, for necessary conclusions." [44]

The basic distinction in inductions, then, is not between inductions through " intuition " and inductions through " syllogism,' 'since every induction involves *both*, i. e., a process from singulars (" syllogism ") and the ultimate recognition of the universal (" intuition "). Likewise there is no difference between the form of the induction, whether it arrives at immediate and necessary knowledge or only dialectical knowledge: the difference here consists not in the process—the process of induction and syllogism being the same whether for necessary or dialectical reasoning—but simply in whether the intellect adjudges the eventual propositions to be necessary or merely probable. This final adjudication of the premisses arrived at by induction is not, as St. Thomas points out, something *proved*, but, as in the case of definition, something *seen*.[45] It is

[44] *In De Trin.*, l. 2, q. 2, a. 1, c.

[45] " That through the way of division nothing can be syllogized he (Aristotle)

the case, subsequent to the repetition of singulars, of the singulars "making a stand," of the universal "coming to rest in the soul." [46]

Consequently, one is obliged, if one follows St. Thomas, to reduce the three different species of induction which Professor Sikora elaborates in his "The 'Problem' of Induction," to one, since there is only one in St. Thomas. Furthermore, if one wishes to follow St. Thomas, one must reduce Prof. Sikora's two "levels" of induction, the "phenomenal" (or "empiriological") and the "transphenomenal" (or "ontological") to one, for the simple reason that the philosophy or science of nature as conceived of by St. Thomas, includes both, i. e., both the initial perception of sensible phenomena and the eventual attainment of essences: the two are organically related. The distinction one must make, however, is between the *scientific* or *demonstrable,* and the *dialectical,* since in one case one has science, and in the other only opinion. But these two belong in the same science, since the latter is normally the prelude to the former, the "rational" process (another term used to describe the dialectical or probable process) a prelude to the "demonstrative." [47]

Such a "rational" process would be the theory of Eudoxus on planetary motion which St. Thomas mentions, and which was an attempt to move, through probable reasons or hypo-

proves through the fact that in the way of division the conclusion does not follow with necessity, even when the premisses exist (which is required for the nature of the syllogism); but rather that it is the same in the way of division as in the way of induction. For he who induces through singulars to the universal, does not demonstrate nor syllogize with necessity." *Exposition of the Posterior Analytics,* II, l. 4, no. 3.

[46] *Op. cit.,* l. 20, no. 11.

[47] "Sometimes, however, the inquiry of reason does not reach the final term, but comes to a stop in the inquiry itself—when, namely, there remains still to the one inquiring a way open to either of two contradictories [as in the case of any as yet not completely verified hypothesis, which need not be accepted as necessarily true]. And this occurs when one proceeds by probable reasons, which are fitted to produce opinion and belief, but not, however, science. In this sense, then, the 'rational' process is distinguished against the 'demonstrative.' And one can proceed 'reasonably' in this way in any science, so as to prepare the way, through probable reasons, for necessary conclusions." *In De Trin.,* l. 2, q. 2, a. 1, c.

theses, towards the truth about the heavenly motions, a knowlelge of which played an integral part in the movement towards divine science in the conception of St. Thomas. Such a thing as the Bohr model of the atom today is no different—an attempt to explain the appearances in a movement toward ultimate truth. That truth, and not elegant construction, is the aim in such theories may be seen from the fact that if they can find no verification in sensible reality—as the Bohr theory was verified by the intervals in the lines of the spectrum of hydrogen—no great attention is paid to them by science.

Few would deny that St. Thomas in his writings—in distinction to subsequent elaborations initially suggested by something in St. Thomas, yet not necessarily conforming to the pattern of thought he himself would follow—has only one conception of induction, and that he does not make allowances for an "empiriological" and an "ontological" science of nature. These subsequent distinctions, with the new terminology and outlook which they originate, put the actual writings of St. Thomas one step farther away from the potential reader: one must put them aside in order to read St. Thomas. These distinctions justify themselves on the basis that they are meeting new situations not envisaged by St. Thomas. But should these supposedly "new" stiuations be already encompassed by the philosophy of St. Thomas, then such distinctions are at best superfluous.

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THE SUBJECT OF PREDICAMENTAL ACTION ACCORDING TO JOHN OF ST. THOMAS

AN unfortunate and somewhat embarrassing diversity of opinions exists among Thomistic writers on the subject of predicamental action. Some say action is in the agent; [1] others say in the patient; [2] still others say in both agent and patient.[3] Such diversity is unfortunate because it indicates a lack of clarity, and leads one to agree appreciatively with the frank statement of one writer: "As regards the exact manner in which action causes the transition from potency to act in the recipient, we can only say that its nature is too profound to be penetrated by our intellect." [4] The diversity of Thomistic opinions is also embarrassing, for lack of clarity on the subject of predicamental action means lack of clarity on predicamental action itself. And this lack has its repercussions on our notion of efficient causality, the exercise of which is action, and on our analogical notions of the divine action and all virtually transient actions.

The matter is difficult. The variety of opinions proves that. Yet this article is written from the conviction that a careful and precise analysis of the thought of John of St. Thomas will give a clear, understandable answer to the problem of the subject of predicamental action and of the nature of predicamental action. The doctrine of John of St. Thomas on the subject expresses the reality, is in full conformity with the

[1] Gredt, Joseph, *Elementa Philosophiae Aristotelico-Thomisticae*, ed. 8a, (Barcelona: Herder, 1946), I, nn. 281-284.

[2] Pirotta, Angelus M., *Summa Philosophiae Aristotelico-Thomisticae*, (Turin: Marietti, 1936), II, nn. 259-264.

[3] Hugon, E. *Cursus Philosophiae Thomisticae*, (Paris: Lethielleux, 1907), II, n. 262; Maquart, F.-X. *Elementa Philosophiae*, (Paris: Blot, 1937), II, p. 104.

[4] Van Laer, Henry. *Philosophico-Scientific Problems* (Duquesne Studies, Philosophical Series, No. 3), tr. by Henry J. Koren. (Pittsburgh: Duquesne University Press, 1953), p. 67.

teaching of St. Thomas and reconciles the opinions of opposing authors. To place the problem in perspective, the first main section will treat of action; the second section will consider the proper problem of the article—the subject of predicamental action; the final section will be a brief evaluation of the presented doctrine of John of St. Thomas.

A. Action

No doubt can exist as to the *reality* of efficient causality. The fact that one rabbit plus one rabbit can result in nine rabbits is explained only by the causal action of generation, not by any axiom of arithmetic. Yet the explanation of the *nature* of efficient causality (or, of the nature of action) is difficult. For an efficient cause is an *extrinsic* principle of the effect; it causes something *new* in the effect. The efficient cause does not give a part of itself, it causes something new and something intrinsic. How can the intrinsic be explained by the extrinsic? The answer, of course, lies in the notion of action, principally as realized in the participative action of God, and secondarily, but just as truly, as realized in the transient action of creatures. Accordingly, the first consideration will be of action as such; the second, of the participative action of God; the third, of the transient action of creatures.

1. Action as Such

The realization that action *ut sic* is never found in a " pure " state is of help in grasping the precise concept of action. For action is either joined to an operation of a higher type, or includes elements not essential to it as action, but only as it is *talis actio*. Spiritual substances, divine and angelic, are true causes with respect to things outside themselves; yet their causative action is not found " alone," but is identical with an operation of a different sort. The divine and angelic causative actions are *immanent* actions of intellect and will, as imperating the exterior effect to be. On the other hand, action as it is *talis actio* requires mutation of the agent and mutation of the

patient. These two requirements hold both for angelic action and predicamental action, which is transient action formally.

Now, what is it that belongs to the concept of action as such? Action, as signifying the exercise of efficient causality, implies only that the agent produce or emanate the effect, which accordingly depends on the agent.[5] And since action is the exercise of causality by the agent with respect to the effect, the immediate consequence is that the effect produced must always have something new in it as a result of the agent's action.[6]

2. The Participating Action of God

The fundamental explanation of how the extrinsic brings about the intrinsic, of how new being comes to be, lies in action as realized in the causality of God, and in the notion of the effects of this causality being participations from the divine being. There seems some value in using the notion of participation to explain the extrinsic-intrinsic difficulty mentioned above. For participation explicitly signifies both formal and efficient dependence: God efficiently participates to creatures that which is intrinsic to the creature—its form, which is a deficient, distinct, and partial possession of what is totally possessed by God.

Participation of new being

Created being is not a portion of the divine being, nor is it completely independent of the divine being. That is, a creature is not a participation of the divine being in the pantheistic sense, as a sharing of the same reality, but is a reality partici-

[5] Cf. *Cursus Philosophicus Thomisticus.* ed. Reiser. (Turin: Marietti, 1933): ". . . de conceptu actionis est actualis emanatio seu emissio alicuius ab agente" (II, 305b 41-43); "De ratione . . . actionis, ut causalitas est agentis, praecise est, quod sit actualitas per modum emanationis seu originis ipsius effectus ab agente cum dependentia effectus ab ipso" (II, 306a 20-25).

[6] Cf. *Ibid.*, 26-32: "Et ista habitudo agentis ad effectum, mediante qua effectus dependet ab ipso, est de intrinseca ratione actionis, quae est causalitas et ita semper requirit aliquam novitatem saltem quoad modum et dependentiam in ipso termino respectu agentis."

pated from God. Yet it is not so wholly new and distinct in itself that after creation there is an increase in the totality of being. There are more beings, to be sure, but not more "being." The participated reality is distinct from the *per essentiam* reality, yet is not additional to it. When a group of men stand around a fire and are warmed by it, there are eleven warm things (the fire plus the ten men); yet there is no additional heat. Nor is the warmth in each man the heat of the fire, but something distinct from and caused by it. Again, when a professor explains a profound metaphysical principle to his class, each of the students, in the light of the professor's explanation, gains some insight into the meaning of the principle; yet there is no additional knowledge in the classroom. Thus created being is not something wholly additional to its source, but is new being distinct from, derived from, less than, and constantly dependent on the causing action of God, who is the divine being.

Participation of created causes

God not only causes other beings by participating to them what is intrinsic to them; He also grants to creatures the dignity of causality, yet in such a way that every cause, every action and every effect has its fundamental source and ultimate explanation in the divine causality. Furthermore, since no creature can create, every created efficient cause must exercise its causality by working on a subject. Thus, as giving an essential requisite for created efficient causality, God created potency, which is an inherent or intrinsic capability to be actualized. Thus God has created efficient, formal and material causes. Whenever a created efficient cause works, it must work on the material cause. How then can a created efficient (extrinsic) cause produce something intrinsic? By acting on the intrinsic, by acting on matter. "The operation of nature takes place only on the presupposition of created principles." [7]

[7] St. Thomas, *Summa Theol.*, I, q. 45, a. 8, ad 4.

3. Created and Predicamental Action

Created action is predicamental action. Both corporeal and spiritual agents must act on some subject. Thus even the causative actions of angels, as virtually transient, share in the predicament of action.[8] Accordingly, whatever is said of predicamental action is to be applied to immanent actions as these are virtually transient, whether they be angelic or human spiritual operations.[9] The following discussion will concentrate on formally transient action.

Created action necessarily has three connotations or references: [10] to the effect, to the patient, and to the agent since action connotes that the *effect* comes to be, is produced. For no agent is termed an agent before the effect is had, since if the agent acts, it ought to act or do something. Secondly, action connotes a movement or passion in the *patient,* for if the effect requires mutation of a patient, it will have movement connected with it; thus action regards movement in the patient only as the effect changes the patient. Thirdly, action connotes the mutation of the *agent,* that is, transition from idleness to operation; for the agent does not act unless it is in the second act of acting. Now, of these three connatations, which is it that signifies precisely what created action is? John of St. Thomas gives a direct answer: "Precisely as it is efficient causality, it regards only the effect, for only this is caused." [11]

Thus far everything seems sufficiently clear. The precise constitutive of created causality does not differ from what was said earlier on action as such. Action, including created action, produces the effect; the effect comes to be, and has real dependence on the agent. But when we consider the other

[8] Cf. *Curs. Phil.,* II, 264b 28-31; 265b 18-30.

[9] Yet it should be remembered that such causative actions are also formally immanent, and so the beginning of the action and establishing of contact will be different than that had in formally transient actions.

[10] Cf. *Curs. Phil.,* II, 265b 42-266a 40.

[11] *Ibid.,* 266a 35-38: Ut autem est causalitas efficientis praecise, solum respicit effectum, quia solum hoc est causatum; cf. *Ibid.,* 15-20: "Sed tamen per se et formaliter actio non constituit causalitatem, nisi ut tenet se ex parte agentis per ordinem ad terminum, quia oportet, quod denominet agens causare et operari."

connotations of created action, difficulties develop. Yet such consideration is necessary for a clear understanding of *how* the created agent produces the effect.

B. The Subject of Predicamental Action

Created action is *talis actio* and brings in, as has been seen, mutation of the agent and mutation of the patient. There is second act in the agent, and movement (*motus*) in the patient. With regard to mutation of the agent, it is said that action is in the *agent.*[12] And as regards the mutation of the patient, action is in the *patient.*[13] Consequently we have the classic formula: ". . . action in a created agent . . . is inchoatively in the agent and consummatively in the term. . . ." [14] Quite obviously, action must be in the agent and patient in different ways and " not according to the same modal entity or formality, for this is impossible, since there is a diversity of subjects. . . ." [15] Thus action is in both agent and patient ". . . according to a diverse modal entity and formality, which by a certain order are one." [16] And, somehow, from this complexity of action in the agent and action in the patient, the effect is produced.

Three questions suggest themselves in the phrases, " inchoatively in agent . . . consummatively in patient . . . according to a diverse modal entity." First, is there anything that in any way " crosses over " from the agent into the patient? Secondly, how does the effect really come to be? Thirdly, how can action in the agent be only modally distinct from action in the patient? To answer these questions, and further to penetrate the formula " inchoatively in agent and consummatively in patient," three

[12] *Ibid.*, 312a 44-b 4: . . . actio, quae est causalitas emanans ab agente, quatenus reddit agens actuatum in actu secundo et transmutatum de otio in actum, relinquit formalitatem actionis in agente inchoantem ipsum effectum.

[13] *Ibid.*, b 5-12: Ut autem reddit effectum in actu secundo causatum et procedentem a causa, ponit formalitatem in effectu, qua redditur actio consummata, et inde fit denominatio agendi; neque enim aliquid dicitur agere ante effectum, et ratione huius simpliciter actio est in termino.

[14] *Ibid.*, 312a 27-28.

[15] *Ibid.*, 312a 29-31.

[16] *Ibid.*, 312a 32-33.

points will be covered in detail (each answering the above correspondingly-numbered question): 1. action in the agent; 2. action in the patient; 3. comparison of action in agent to action in patient.

1. Action in the Agent

Operative potency is moved, and receives its second act

Since a creature is not the fulness of actuality, its substance, operative power, and operation are all really distinct. While the substance and operative powers are permanently in the agent, the actions are transitory and begin to be. Thus the agent must be changed in order that the change from not acting to acting be had, and this change is accomplished by the motion of a higher power. Some superior agent applies the operative power, and the agent begins to act.

This second act which results in the agent from the application by the superior agent fullfills the capacity of the agent. The agent is now fully proportioned to cause the effect. For the operative power is, by its nature, a capacity to cause an effect in another, but is insufficient of itself to cause the effect. The operative power must be completed in itself; the second act is a form inhering in the power, actualizing and completing it. Consequently, and a point which will be capitalized on later, the second act is an *accident* inhering in the operative power.[17]

The operative potency actively elicits its second act

Is the operative potency only passive as to its passage from potency to second act? It might seem so, for the potency *is moved* by a superior agent; the potency is the *subject of in-*

[17] *Ibid.*, 314a 11-17: Sieut enim intrinsece agens est in potentia et in actu primo ad operandum, ita oporet, quod reducatur intrinsece ad actum secundum et mutetur in actum, dum in actu operatur; debet ergo ista actualitas actionis in agente esse. John of St. Thomas cites many references to St. Thomas in support of this: ". . . action is the actuality of power . . ." (*Summa Theol.*, I, q. 54 a. 1); "The action of a thing . . . is a complement of its power" (*II Cont. Gent.*, c. 9; tr. by James F. Anderson, (Garden City, N. Y.: Doubleday Image Books, 1956), II, p. 40, n. 3); ". . . action . . . inasmuch as it is an accident, is considered in the subject acting" (*De Pot.*, q. 7, a. 9, ad 7).

hesion of the second act; and, since the second act inheres in the potency, it must be *educed from* the potency. In other words, does the second act come from the potency with the potency acting only as a material cause?

If such were the case, then it seems incomprehensible how the operative power is truly operative and causative of the effect. For unless it is an active principle (in its own order as a secondary cause) of its own operation, then the very notion of an active power is lost. The operative power must be somehow active with respect to the first step in its causality of the effect; otherwise how can it be said to be active with respect to subsequent steps?

Also, if the power is not active with respect to its own second act, what is the meaning of "eliciting an action"? It would in no wise differ from the emanation of a proper accident from a substance. For both the substance and the operative power would be in themselves inoperative; the only active causality exercised would be that of the superior agent (the generator of the substance, or the mover of the potency). The emanating substance, or power, would be ". . . the principle of the passions [or second act], not as first eliciting their production, but as the medium and *ratio* of advancing the action [of the superior agent] to them."[18] Yet John of St. Thomas expressly excludes a substance from being an eliciting principle of its proper passions ". . . because, for the eliciting of an action, which is a true operation and action, there is required an operative potency, and it cannot be elicited immediately by the substance."[19] Similarly St. Thomas distinguishes emanation of a proper accident from the eliciting of a second act: "The

[18] *Ibid.*, 269a 47-b 22: Respondetur emanationem esse veram et physicam causalitatem, non tamen distinctam ab ipsa generatione, quae, ut attingit substantiam, dicitur generatio, ut autem mediante ipsa substantia progreditur ad passiones ratione debiti et connexionis cum illa, dicitur emanatio. Et sic substantia est *principium passionum, non ut primo eliciens productionem illarum, sed ut medium et ratio progrediendi actionem ad illas,* ita quod generatio non sistat in ipsa, sed mediante ipsa ulterius transeat ad passiones. . . . vere agit actionis generationis, non elicita a se, sed terminata ad se et ratione sui ulterius progrediente. (Italics added).

[19] *Ibid.*, 268b 23-26.

emanation of proper accidents from their subject is not by way of transmutation, but by a certain natural resultance." [20] And for St. Thomas, the coming forth of the second act of the agent is only by way of transmutation of the agent.[21] Thus the eliciting of the second act is more than the mere continuance and passing on of the active causality of the superior mover. The operative power, in eliciting, is itself active.

Yet would not the eliciting be a *prior act* of the power? Or, to re-phrase the question, does not the active eliciting of the second act *suppose* the causality of the operative power? [22] But the second act *is*, as we shall see, the causality of the operative power, for by it the effect is produced. The answer lies in the very nature of an operative power.[23] There is no intervening entity nor " act " of eliciting. Rather, the operative power, having been moved by a superior agent, actively and immediately elicits its second act. We do not say that an operative power is only " disposed " to its act; rather it is " moved." An operative power is not merely potency, but actuality (" operative ") in potency. When, by the motion of the higher cause, it is further actualized, it actively elicits its second act.[24] In other words, the operative potency has the actuality of its nature, and its nature is to be the active principle of its act and of its effect. To look at the same process from the aspect of the second act coming from the potency, there is no intervening entity nor " act " of eliciting, but rather, when the power has been moved, the second act " emanates by itself." [25] The " by itself " does not deny an active influence by the power, but means that nothing mediates between the

[20] *Summa Theol.*, I, q. 77, a. 7, a. 3.

[21] *II Sent.*, d. 1, q. 1, a. 5, ad 11: . . . agens agit actione media, quae non est essentia ipsius operantis, et in talibus non potest sequi effectus novus sine nova actione, et novitas actionis facit aliquam mutationem in agente prout est exiens de otio in actum.

[22] Cf. *Curs. Phil.*, II, 309a 34-41, for this argument in reference to immanent action.

[23] Cf. above (footnote 19), where John of St. Thomas excludes a substance from eliciting, because it is not an operative power.

[24] As we shall see, by this second act the power produces the effect.

[25] *Ibid.*, 309a 17-19.

potency and its second act in the coming-forth of the second act.

Difficulties yet remain. If the operative power is active with respect to its second act, then it would seem that ". . . the same thing acts on itself, and thus is at the same time in act and in potency with respect to the same thing, in act toward acting [emanating], and in potency toward receiving." [26] John of St. Thomas does not deny that the potency is active in emanating its second act. Rather he indicates that it is not precisely the same thing that is active and passive. The potency emanates its second act as it has been moved by the superior agent, it receives its second act as it is in pure potency.[27]

Inchoative causality of effect

The discussion thus far of the potency and its second act could be summarized as " the subjective evolution of the potency." [28] The present treatment considers the second act as it looks toward the effect. It was seen above that John of St. Thomas did not deny that the potency is active in emanating its second act. Yet he does qualify his response by pointing out that the active emanation of the second act is not the efficient causality of the power. For it would seem that the second act would emanate as a term or effect. But this is expressly excluded: " That actuality in the agent emanates from it, not as a term or effect, but as a mode or causality initiated." [29] Here is met a point of capital importance for understanding the

[26] *Ibid.*, 311b 13-18: . . . illa actio, quae est in agente, emanare debet ipsa, ergo idem agit in seipsum, et sic semel est in actu et in potentia respectu eiusdem, in actu ad agendum, et in potentia ad recipiendum.

[27] *Ibid.*, 315a 7-21: . . . respondetur, quod illa actualitas in agente emanat ab ipso non ut terminus seu effectus, sed ut modus seu causalitas inchoata. Et talis modus non emanat ab ipso agente, ut est in potentia pure, sed ut est in potentia mota a Deo et aliis causis superioribus, quibus inferiores determinantur et actuantur, ut emanet ab illis actualitas actions, quae rursus in ipsa potentialitate actus primi recipitur actuando illam per modum actus secundi; et sic non est in potentia et actu secundum idem.

[28] Cf. DeAndrea, M., *Praelectiones Metaphysicae*, II, p. 351 (Rome: Angelicum, Ad usum privatum auditorum. 1957). All references to DeAndrea will be from the 1957 ed.; for 1954 ed., see p. 196-199; for 1951 ed., see p. 184-187.

[29] Cf. Footnote 27.

efficient causality of the created agent. Granted the necessity of the agent's actively emanating its second act, this active emanation is *not* the exercise of the agent's efficient causality.[30] Rather, the whole purpose of the emanation of the second act is to enable the agent to exercise efficient causality. *The agent, as an efficient cause, causes the effect.* But since the agent is created, it cannot act immediately but only by an added *act* which *assists* in the production of the effect. The potency consequently does not regard its second act as an effect (a thing produced), but rather as a kind of medium, or, more precisely, as a mode or *ratio* of producing the effect, as causality initiated.[31] Since the second act itself is only the *beginning* of the causality of the effect, everything leading up to the second act is merely a *prerequisite* for causality. The prerequisites for causality may be summarized as follows: [32]

1. existence of operative potency in agent.
2. (passive) the operative potency (as operative *potency*) is moved by a superior agent.
3. (active) the operative potency (as an applied *operative* potency) actively elicits its second act.
4. (passive) the operative potency (as *subject* of its completing accident) receives its second act.

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[30] The difficulty is to maintain both that the potency *actively* emanates its *act*, and *efficiently* causes its *effect*. Both are true, yet cannot be confused. The difficulty seems one of language; we are here at the roots of efficient causality, and run out of terminology. The inclination is to say, "If it is active, it is efficient," but such would be an oversimplification. Rather, the potency actively emanates its initial exercise of efficient causality (namely, its second act).

[31] *Curs. Phil.*, II 306a 6-12: In causis . . . creatis actio seu effluxus est medium inter agens et effectum quasi accidentaliter, et non substantialiter illi conveniens, non tamquam res producta, sed tamquam modus seu ratio ipsa producendi. Cf. footnote 29; and *Iibid.*, 309a 41-b 29 for the same answer with regard to immanent actions.

[32] Contrast this analysis of the active and passive aspects to the more simplified analysis of DeAndrea (*Praelectiones Metaphysicae*, II, p. 354-5, Scholion 3°). For a complete analysis, to the above prerequisites for efficient causality there should be added the two active elements of efficient causality: 5. the second act of the agent as acting on the patient; 6. the *motus* in the patient from the agent culminating in the effect.

The question remains as to how the second act of the agent can be causative of the effect. This second act is an accident inhering in the agent, and one and the same numerical accident cannot cross from subject to subject.[33] But if the second act of the agent cannot cross into the patient to produce the effect, it might seem that action is impossible. To use the argument attributed to Leibnitz; "If transient action is admitted, there should likewise be admitted either action on a distant thing, or the crossing of an accident from subject to subject."[34] St. Thomas had long before considered the objection:

> . . . certain exponents of the Law of the Moors are reported . . . to adduce in support of this argument [that natural agents have no active role in the production of effects] that even accidents do not come from the action of bodies, because an accident does not cross from subject to subject. Hence they regard it as impossible for heat to pass over from a hot body into another body heated by it.[35]

For St. Thomas, such an objection borders on the ridiculous:

> . . . it is laughable to say that a body does not act because an accident does not pass from subject to subject. For a hot body is not said to give off heat in this sense, that numerically the same heat passes over into the heated body. Rather, by the power of the heat which is in the heating body, a numerically different heat is made actual in the heated body, a heat which was previously in it in potency. For a natural agent does not hand over its own form to another subject, but it reduces the passive subject from potency to act.[36]

We will now turn our attention to the consideration of action as it is in the patient. The following will hardly be more than a development of the above response of St. Thomas.

[33] Cf. Boethius, *Comment. in Categ. Arist.*, l. I; quoted in *Summa Theol.*, III, q. 77, a. 1.

[34] As stated by Hugon, *Cursus Philosophiae Thomisticae*, VI, n. 154.

[35] *III Cont. Gent.*, c. 69 (tr. p. 229, n. 11).

[36] *Ibid.*, (tr. p. 234-235, n. 28).

2. Action in the Patient

In investigating the manner in which the agent causes the effect, the focus might be placed only on the second act of the agent and the new form it causes. One would be left imagining some type of formal emanation as the explanation of efficient causality. To show that the composite agent causes the composite patient, and that the new form is truly caused by the agent, we will first consider the coming-to-be of *forms*. Then, in discussing the coming-to-be of the *effect* in the patient, we will be in position to consider how action is in the patient.

The coming-to-be of forms

The question might be asked, "How does the *form* of the effect come to be?" But the question would be an improper one, proceeding from a false notion of natural forms. Natural forms do not come to be by themselves, for a form is a *quo*, not a *quod*, and so does not have being by itself. That is caused which has being. Accordingly natural agents do not cause only the form, but rather the *composite;* for the composite has being, having it through its form.[37]

Since the composite is what is properly caused, it is caused by a composite, for a like thing is made by its like. Accordingly, "corporeal forms . . . are not caused as an emanation from some immaterial form," [38] that is, from a subsisting form, as Plato held, nor from a form in the intellect of a spiritual creature, as Avicenna held. To the contrary, "corporeal forms . . . are caused . . . by matter being brought from potentiality to act by some composite agent." [39]

Can it then be said that the second act of the agent causes only the form of the effect, and causes it immediately? The

[37] *Summa Theol.*, I, q. 45, a. 4: . . . to be made is directed to the being of a thing. Hence to be made . . . properly belongs to whatever being belongs; which, indeed, belongs properly to subsisting things, whether they are simple things, as in the case of separate substances, or composite, as in the case of material substances. (Cf. *Ibid.*, q. 45, a. 8; q. 65, a. 4).

[38] *Ibid.*, q. 65, a. 4.

[39] *Ibid.*

process, as is clear from the words of St. Thomas, is more complex than that. The *composite agent* causes; that is, both the matter of the agent and its second act are involved, for the action is an accident, inhering in matter. The *composite patient* is caused; there is a disposing of the matter and the educing of the form.

The second act of the agent does not cross into the matter, but as it were remains "outside," remains in the agent, and acts in conjunction with its own matter in which it is as an accident. If the second act remains wholly outside the patient, and effects no new disposition of the matter of the patient, there is only a "push," only local motion; the change in the patient is extrinsic to the patient, a change in *ubi* or place. The second act can work an *intrinsic* change in the patient only by redisposing the patient's matter, and this basically is local motion re-locating a part of the patient.[40] The matter of the patient thus being redisposed, it is no longer apt for the form it possessed, but is made apt for a new form which corresponds to its present dispositions. But matter is by its very nature the potential aptness for all forms. When this aptness is actualized according to the dispositions of its second matter (*materia secunda*), then the matter has been reduced from potency to act; the form which it contained in potency is now contained in act. The form has been educed from the matter. Thus it is seen that the form does not come to be by itself; rather the composite comes to be, the matter by being redisposed, and the form by being educed, which are two aspects of the same process. The process is the causality of the effect by the agent.

Nor is such an explanation of efficient causality to be confused with Occasionalism. Although the difference between the Thomistic and Occasionalist explanations is at the first sight subtle, they are in reality poles apart. The Occasionalists hold that created agents only dispose to an effect, and that God

[40] Thus Aristotle and St. Thomas say that all natural changes (local motion, alteration, augmentation, generation) are founded on local motion; Cf. *Physics*, VIII, c. 7, 260a 29, b 4; St. Thomas, lect. 14, n. 2305 ff.

causes the effect, thus placing *in one order* both the causality of God and of creatures. The Thomistic explanation is that there are *two orders* of causality, divine and created, both of which really and totally attain the effect.[41] For created causality is dependent upon the divine causality, not only as regards the effect, but throughout the whole process. Forms are in the potency of matter because that is what God has concreated matter to be.[42] And forms are caused ultimately by God. The forms that actually informed things created in the beginning were concreated.[43] Forms that are caused immediately by natural agents are reduced ultimately to the divine causality.[44] But in its own order a created agent is a true efficient cause and truly produces the effect.

While the agent causes the form by disposing matter to the form, so that the form arises from the matter where previously it was potential (since this is the very nature of matter and form), yet created causality is primarily termed *formal*, and not dispositive (as the Occasionalists would have it). For when a created agent acts, it does not produce matter; it changes the form, it changes a cold piece of iron to a hot piece of iron. For every agent acts according as it is in act, and it is in act by its form. "No natural or created agent can act except by changing the form in something; and on this account every change made according to nature's laws is a formal change."[45]

The coming-to-be of the effect in the patient: MOTUS, PASSIO, ACTIO

How then does the effect in the patient come to be? The effect is the actuality resulting in the patient when the second

[41] Cf. *III Cont. Gent.*, c. 70 (tr. p. 236, n. 8).

[42] *Summa Theol.*, I, q. 65, a. 4, ad 2: "Forms received into matter are to be referred . . . to the types (*rationes*) in the Divine intellect, by which the seeds of forms are implanted in created things, that they may be able to be brought by movement into act."

[43] Cf. *Ibid.*, q. 45, a. 8; q. 65, a. 4.

[44] Cf. Footnote 42.

[45] *Summa Theol.*, III, q. 75, a. 4; on this problem of created causality, chapters 69 and 70 of *III Cont. Gent.* are excellent.

act of the agent redisposes the patient's matter. Considering second matter, which is quantified and so composed of parts, the patient is redisposed successively, is actuated successively.[46] When a piece of iron is placed by a fire, the part closest to the fire becomes warm first, the warmth then spreading through the iron until the whole is red-hot. There is a growth in actuality is *received*, according as the iron receives a redis- of iron.

This growth or progress clearly is *motus*, the movement of the piece of iron to the term of heat. Secondly, since this actuality is *received*, according as the iron receives a re-disposition of its matter, there is in the iron a *passio*. Thirdly, according as the heat in the part of the iron closest to the fire *acts* on the cooler parts, according as this actuality is, as it were, the medium of the action of the fire itself in producing further heat, this actuality is said to be *actio*.[47]

There are then three realities in the patient: action, *motus*, and passion. Action is not passion, but both are modally distinct from, and the same as, *motus*. Thus, to the question whether *motus* is the act of the mover or the mobile, St. Thomas replies, "*Motus*, according as it proceeds from the mover into the mobile, is the act of the mover; but as it is in the mobile from the mover, it is the act of the mobile."[48]

[46] Cf. *Curs. Phil.*, II, 257b 11-36.

[47] Even when the production of the effect is instantaneous (as in generation), there can be said to be in the patient: 1) *passio* (in sense of mutation of patient); 2) *motus* (in metaphysical sense of mutation); 3) *actio* (in sense of progress to the effect; the progress has its "remote" source in the elicited act of the agent which produces by physical *motus* the redisposition of the second matter of the patient, through which the prime matter of the patient is made proximately apt to the substantial form).

[48] *III Physic.*, lect. 4, n. 307: Nam motus secundum quod procedit a movente in mobile, est actus moventis; secundum autem quod est in mobili a movente, est actus mobilis. To summarize briefly the doctrine on action and passion, we can note: 1. action and passion are not the same: Motus . . . dicitur actio secundum quod est actus agentis ut ab hoc; dicitur autem passio secundum quod est actus patientis ut in hoc. Et sic patet quod licet motus sit idem moventis et mobilis, propter hoc quod abstrahit ab utraque ratione, tamen actio et passio differunt propter hoc, quod has diversas rationes in sua significatione includunt (*Ibid.*, n. 320; for the answer to the objection that things equal to a third thing are equal

A point of capital importance must be stressed. This action or actuality in the patient is *not* the second act of the agent. It is *res a re* distinct from it. But it is its medium, its minister, in the production of the final effect. It is as *vices eius gerens*. Thus its role is similar to that played by the second act of the agent with respect to the causal power of the agent; it is as its medium, as part of the *ratio* of causality.

3. Comparison of Second Act of Agent to Action in Patient

A fundamental source of difficulty seems to be a confusion in the way we use the word "action." Although normally these variations in meaning are of slight importance, they assume major proportions in the question of the subject of action. We have seen that action, the exercise of efficient causality, connotes in a created agent: 1) the operative potency eliciting its second act; 2) this second act applying the matter of the patient; 3) the resulting actuality educed in the agent; 4) this actuality culminating in the full actuality which is the term or effect. Unifying all the above connotations into one consideration, we see that action has *two formalities, three meanings,* and is *a composed thing.*

Two formalities of action

Action has two formalities.[49] The *first* is in the *agent,* and

to each other, and so action and passion, since the same as *motus,* are also the same, Cf. *Summa Theol.,* I, q. 28, a. 3, ad 1). 2. Action and passion are in *motus* as in a *subjectum quo*: Inesse motui denotat, quod habet rationem subjecti . . . non . . . ut quod, sed ut quo, tamquam conditiones necessariae motus, siquidem motus essentialiter est fluxus et tendentia quaedam, quae necessario requirit fluere ab aliquo et tendere ad aliquid in aliquo subjecto, quod est includere actionem et passionem (*Curs. Phil.,* II, 299b 35-44). 3. The action of the agent is in the patient differently than in the agent itself: . . . idem actus est huius, idest agentis, ut a quo; et tamen est in patiente ut receptus in eo. Esset tamen inconveniens si actus unius eo modo quo est eius, esset in alio (*III Physic.,* lect. 5, n. 316; this answers the objection, ". . . si actio non est in agente sed in patiente, sequetur quod proprius actus uniuscuiusque non est in eo cuius est actus"—lect. 5, n. 312).

[49] *Curs. Phil.,* II, 313a 21-26: . . . intelligamus actionem . . . importare non unum, sed duplicem formalitatem, unam in agente, ut est actio agens [or, actio efficiens], et aliam in effectu seu passo, ut est actio effecta.

is called "effecting action" (*actio efficiens*). The operative potency, by eliciting its second act, begins its causality of the effect through its second act which applies the potency of the patient. The exercise of causality by the agent is with respect to the effect, and regards its own second act only as part of its way of causing the effect. For the agent's capacity for causing the effect is fulfilled by the actuality of its second act; and this second act, by acting on the patient, begins the mutation of the patient which will culminate in the effect. Thus the second act of the agent is the *beginning* of the exercise of causality with respect to the effect. The second act of the agent is action *inchoatively*.

The *second* formality of action is in the *patient*, and is called "action effected" (*actio effecta*). This is the active progress to the term (and so "action") which is in the patient *from* the agent and so "effected." Thus action in the patient, as productive of the term, is action *consummatively*.[50]

It is in this last sense of action (action effected) that St. Thomas says that action is modally distinct from *motus*, and that *motus* is the act of both agent and patient.[51] Likewise with regard to predicamental action, St. Thomas speaks of this as only modally distinct from *motus*, and so in the patient. But here again St. Thomas is speaking of action consummatively, since the stress is on predicamental action according to the complete *ratio* of action.[52]

[50] *Ibid.*, 314a 17-29: . . . non consummatur actio et causalitas agentis, nisi effectus ipse procedat et emanet actu ab ipso. Et sic origo ipsa motus et termini producti cum ipso motu et termino identificari debet; illa autem origo actio effecta est et causalitas, et sic formalitas actionis, ut processio et origo origo motus, cum termino et motu debet identificari, ibique consummatur actio, qua ibi terminatur.

[51] Cf. footnote 48, and *Curs. Phil.*, II, 314a 40-44: . . . respondetur actionem effectam identificari cum motu et termino producto, sed non actionem efficientem, quae est actus secundus agentis.

[52] Cf. *Curs. Phil.*, II, 315a 22-26; 311b 19 ff. Yet if *actio effecta* is the predicament of action, in what predicament shall *actio efficiens* be placed? It is reduced to the predicament of action. (Cf. *Ibid.*, 314a 39-44)

Three meanings of action

Action has three meanings:[53] 1) action as the second act of the agent; 2) the action which is identical with *motus* (*actio effecta*, action consummatively); this is the sense in which action is spoken of in *III Physics*; 3) action as the exercise of causality; this includes and is composed of the above two. Action in this last sense is not simply one accident. Moreover, since the second act of the agent is reduced to predicamental action, predicamental action (as including what is reduced to it) means action in this third sense. Thus John of St. Thomas insists that action as a predicament and as the exercise of causality are the same.[54] It is likewise now evident why St. Thomas says: ". . . action, from this that it is action, is considered as from the agent; but inasmuch as it is an accident, it is considered as in the subject acting."[55] For there are two senses of action referred to here: as it is the exercise of causality, and as it is the second act of the agent. In calling this last reality " action," there is predication of the whole of a part.

Action is a composed thing

The final point of importance, and the key idea in understanding predicamental action, is that action is a composed thing. When action is said to be " inchoatively in the agent and consummatively in the patient according to diverse modalities," this does not mean that an accident which is simply one is in two diverse subjects according to diverse modalities. It means that *the reality which is the exercise of causality* is in different subjects according to diverse modalities. Action, the exercise of efficient causality, is a *composed* thing, made up of partial elements (*actio efficiens* and *actio effecta*). The totality is only modally (*res a parte rei*) distinct from the parts. But

[53] That action has at least a twofold sense is substantiated by DeAndrea: " agere seu actio potest dupliciter considerari: uno modo, ut actus seu terminus transitus agentis de potentia agendi ad actum agendi; alio modo, prout dicit id quo agens formaliter et actu est influens in effectum seu causans " (*Praelectiones Metaphysicae*, II, 350-351).

[54] Cf. *Curs. Phil.*, II, 264b 28 ff.

[55] *De Pot.*, q. 7, a. 9, ad 7.

the parts are absolutely (*res a re*) distinct from each other. That John of St. Thomas intends this as an absolute distinction is evident from his example: "A moral virtue which moderates the passions is said to be in a twofold potency, inchoatively in the will imperating, and consummatively in the appetite eliciting the moderating passions." [56] That which is in the will and that which is in the appetite are absolutely distinct, since he designates these as "the disposition of the will to virtue" and "the virtue in the appetite." [57]

Thus John of St. Thomas says that both *actio efficiens* (the second act of the agent) and *actio effecta* (*motus* as from the agent) are in themselves imperfect and incomplete; both complete the same action, and each is a condition and *ratio* pertaining to the full notion of causality and action.

> . . . these two actions are not superfluous, for each of them is not complete and perfect, but each is required for the consummated *ratio* of acting. . . . And both the *actio effecta* and the action of the agent, both formalities, come forth from the agent, not by another action—for each completes the same action and each pertains to the *ratio* of causality— but one by way of actuality of the agent, the other by way of actuality of the patient; not one as an effect and the other as the total causality, but each as a condition and *ratio* pertaining to the same causality. Yet both do not come forth immediately, but in a certain order, for the *ratio* and causality of acting is begun in the action of the agent and consummated on the part of the effect.[58]

C. Evaluation of Doctrine of John of St. Thomas

That the above presentation from John of St. Thomas is also the doctrine of St. Thomas himself seems clear from the texts of St. Thomas already quoted. Further confirmation comes from an article in the *Summa* on types of unity, and from a consideration o fthe various Thomistic manualists.

1. Confirmation from the *Summa*

In a discussion of whether the *imperium* and the imperated

[56] *Curs. Phil.*, II, 312a 36-40. [57] *Ibid.*, 315a 42-44. [58] *Ibid.*, 314b 11-32.

act are one or many,[59] St. Thomas lists the types of unity in a way that readily supports the above doctrine that created action is a composed thing. Things can be one in three ways: 1) simply one and in a way many (*simpliciter unum et secundum quid multa*), as when they are one in substance; thus the essential and integral parts composing the substance are simply one thing and in a way many things; 2) simply many and in a way one, as when they are diverse in substance and one according to an accident; thus many rocks form one rock pile; 3) in a way one and in a way many, as is had when many accidents unite, yet do not form a substance.

That this last type of unity is applicable to the problem of action and therefore action is in a way one and in a way many, and that such is the doctrine of the Angelic Doctor, seems evident from the response to the first objection; in this St. Thomas confirms his procedure in the article from the doctrine on action in the *Physics* of Aristotle.[60] Therefore action, the exercise of causality, is in a way one and in a way multiple; it is one exercise of causality, yet composed of two distinct accidents, *actio efficiens* and *actio effecta*.

2. Survey of Modern Thomistic Writers

Father Gredt [61] follows Cajetan in insisting on the first meaning of action, as it is the second act of the agent, and so places action in the *agent*. Father Pirotta [62] prefers the opinion of Capreolus, and so places action in the *patient*. Father Hugon [63] simply summarizes John of St. Thomas without going into the difficulty of how one thing can be in two subjects. Father DeAndrea [64] gives a stimulating presentation of the doctrine of John of St. Thomas on the nature of created efficient

[59] *Summa Theol.*, I-II, q. 17, a. 4.

[60] *Ibid.*, ad 1: ". . . when one power is the mover of the other, then their acts are, in a way, one, since the act of the mover and the act of the thing moved are one act as is said in *III Physic.*"

[61] Gredt, *Elementa Philosophiae*, I, n. 281-284.

[62] Pirotta, *Summa Philosophiae*, II, n. 259-264.

[63] Hugon, *Cursus Philosophiae Thomisticae*, II, 262.

[64] DeAndrea, *Praelectiones Metaphysicae*, II, Pars Tertia, c. 3, n. 3, p. 349-358.

causality, makes the distinction of the twofold sense of action, but does not explicitly consider the subject of this action. He also seems to oversimplify the analysis of the active role of the potency in eliciting its second act. Father Maquart [65] likewise follows John of St. Thomas, but insists that the *one accident* is in two different subjects according to diverse modal entities, an opinion with which this article disagrees. The source of the difficulty seems that he desired to follow in detail the doctrine of John of St. Thomas, but did not realize the twofold sense of action, nor that action is in a way one and in a way multiple; also, he is not precise on the meaning of *motus ab agente.*[66]

John of St. Thomas' treatment seems most in conformity with the doctrine of St. Thomas; yet of the several Thomistic manuals consulted, even those following John of St. Thomas do not present his full doctrine. Moreover, only in the doctrine of John of St. Thomas are the contradictory opinions of com-

[65] Maquart, *Elementa Philosophiae,* Tomus II, p. 104.

[66] To the objection, "the same accident cannot have two formalities really distinct from each other" (and there could be added, "in diverse subjects"), Father Maquart answers: "This is true if we are treating of a *res a re* distinction, but not if only of a modal distinction. And there is only a modal distinction between each formality. In the activity of the agent in second act there already is present *motus* by which the other formality of action infers the effect into the patient. But the same *motus,* under the prior formality, adds a respect *from* the agent, while in the second formality it adds a respect *into* the patient" (*ibid.*).

When Father Maquart says there is present *motus* in the activity of the agent in second act, this *motus* can only refer to the *motus* applying the faculty to act, or to the second act itself (this latter seems the meaning of Maquart). But *motus* as "under the prior formality," namely, "present in the activity of the agent," can be said to add "a respect from the agent" only in the sense that it is elicited by the agent (and remains in the agent). And this should not be confused with St. Thomas' phrase, "motus ut ab agente," which is action in the patient, *actio effecta.* Thus it is not the "same *motus*" which has two formalities; the *motus* in the agent and the *motus* in the patient are numerically distinct accidents. They are one only in that they together compose the one thing which is action, the exercise of causality.

An explanation such as that of Father Maquart seems to warrant the slighting statement of Father Henry van Laer, a Dutch philosopher-scientist, who, in his detailed study of *actio in distans,* dismisses the traditional explanation of the subject of action by saying it is "merely a play with philosophical words which does not clarify the nature of action and certainly does not allow any conclusions to be drawn as regards the manner in which the intimate relationship of agent and patient comes about" (*Philosophico-Scientific Problems,* p. 85).

mentators reconciled and the deficiencies of each opinion manifested, which is certainly an extrinsic argument in favor of John of St. Thomas.[67] Another aspect of this same argument is that each of the above Thomistic authors quotes St. Thomas in support of his particular opinion. Only John of St. Thomas explains both sets of quotations; the others are forced to explain away one set. For instance, Father Gredt says that, when St. Thomas places action in the patient, he is exercising the role of a commentator.[68] Yet St. Thomas in his own works states that action is in both the agent and the patient. In one section of the *Contra Gentes*, only seven chapters apart, he places action in the agent and then in the patient.[69] St. Thomas was neither forgetful nor confused.

Created action is a complex reality, in a way one and in a way multiple. The total is modally distinct from its parts, the parts are absolutely distinct from each other. The parts are action in the agent (action in a partial sense, namely, the second act of the agent, *actio efficiens*, causality initiated), and action in the patient (action in a partial sense, namely, *motus* as from the agent, *actio effecta*, causality consummated). The two unite to form the one thing which is action in the full sense, the exercise of efficient causality.

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[67] Thus John of St. Thomas states that the fundament of his opinion "is taken from the fundaments of the aforementioned opinions which prove that action is required and is had both in the agent and in the patient" (*Curs. Phil.*, II, 313b 42-314a-4).

[68] Gredt, *op. cit.* "S. Thomas vero, qui in textis allatis exclusive commentatorius munus agit, alias disserte pro re nostra loquitur." Father Gredt then cites the first of the texts from the *Contra Gentes* which are quoted in the following footnote.

[69] *II Cont. Gent.*, c. 9; tr. p. 41, n. 5: . . . an action that is not the agent is *in the agent* as an accident in its subject; and that is why action is reckoned as one of the nine categories of accident. . . . matter stands in relation to an agent as the *recipient* of the action proceeding from that agent. For that same act which belongs to the agent as proceeding therefrom belongs to the patient as *residing therein*. Therefore matter is required by an agent in order that it may receive the action of the agent. For the agent's action, *received in the patient*, is an actuality of the patient's and a form, or some inception of a form, in it (*Ibid.*, c. 16; tr. p. 51, n. 7; italics added).

STRUCTURAL AND OPERATIONAL APPROACHES TO THE PHYSICAL WORLD

PYTHAGORAS and his followers placed great emphasis on geometrical structure as a key to understanding the natures and the operations of bodies, and their regard for mathematics as the key with which to unlock nature's secrets was in harmony with this view. They realized that harmonious sounds were produced by strings whose lengths were related according to mathematical proportion and by such things as this were led to regard number and geometrical form as involved in the essence of the physical world. Plato, following the Pythagoreans, continued to associate the properties of 'elements' with basic geometrical forms.

The Aristotelian-Thomistic emphasis, on the other hand, must be looked upon as one which regards geometrical forms as being inadequate for explaining the operations of bodies. Aristotle gave a simple illustration of his point by noting that air and water can take any shape determined by their container and yet remain air or water. He also was aware that those who tried to account for the properties of elements in terms of their shapes attempted to account for the same property with entirely different shapes. Thus, some thought that the mobility of fire was accounted for by tiny particles of pyramid shape and others accounted for it in terms of tiny spherically shaped particles. Aristotle rejected all this and affirmed that it is the operations which one must study in order to come to a knowledge of the nature of things.

". . . it is clear that the difference of the elements does not depend upon their shape. Now their most important differences are those of property, function and power; . . . our first business, then, will

(A revision of a portion of the author's doctoral dissertation from The Catholic University of America, *The Concept of Nature in Philosophy and Physics*, 1952.)

be to speak of these, and that inquiry will enable us to explain the differences of each from each." [1]

In this way he says that the natures of things transcend the realm of geometry.

There is an important point to be noted here. For, although Aristotle rejects geometrical forms as the key to operation, he retains the word form and gives it another significance. Form becomes for him the unseen principle of activity and operation. In adopting this view Aristotle is affirming a deep faith in the ability of our intellects to understand the natures of things in the physical world. Nevertheless, precise elucidation as to what these forms are is only determined by how they manifest themselves, that is, how the bodies of which they are forms operate. Thus, it is of the greatest importance to recognize the power of a famous scholastic axiom in conformity with Aristotle's view—" A thing operates in that manner in which it is." Here is a principle which indicates awareness of the power of the human intellect in its ability to affirm the reality of a principle of operation. At the same time the principle (used properly) reflects the inability of the intellect to perceive these sources of operation directly.

It will be worthwhile to note in some detail how the scholastic definition of man as a rational animal may be regarded in the light of this functional or operational approach. The definition reduces ultimately to saying that man is a rational, sentient, living, material substance. The observed basis for the more specific elements in the definition is, of course, the observed functions or operations of reasoning, sensing, growing and reproducing. Use of the principle that, " A thing operates in that manner in which it is," then enables one to infer the unseen powers of the soul, and thus to infer the nature of man. It is in the light of the preceding considerations that one may regard Aristotle and Aquinas as operationalists in some sense, and one may now attempt to relate this view to modern physics.

[1] McKeon, R. *Basic Works of Aristotle,* (New York: Random House, 1941) *De Caelo,* 307 b 15.

It must be remembered that both the Pythagorian and the Aristotelian-Thomistic views on this point are in opposition to the atomistic attempts to explain bodies fully in terms of tiny parties identical in size and shape moving locally.[2] This third view, the view of Democritus, is, of course, one which has influenced to a great extent physics and chemistry until recent times. It is also a primarily structural or geometrical theory, but dynamic geometrical models replace the static ones of the Pythagorians. This is clearly seen in an example from recent physics—the Bohr model of the atom. Here the atom is conceived as a miniature solar system. The number, geometrical arrangement and the local motion within the atom of a small number of types of particles explain the properties of the atom.

However, physicists and chemists today are becoming more and more aware of the limitations of the elementary geometrical models which they use in connection with the mathematical treatment of phenomena.[3] The practical usefulness of the models remains to a great extent, but their truth content, that is to say their ability to represent truly and adequately what is going on in nature, is regarded with considerable suspicion. The famous Rutherford—Bohr model of the atom with a nucleus surrounded by electrons moving in fixed orbits (the miniature solar system) is not now regarded as representing truly the nature of the atom. It could not possibly do so for a science like quantum mechanics which regards such basic entities as protons and electrons in a manner so different from classical physics that these entities cannot truly be called particles in the ordinary sense. They no longer are regarded as tiny pellets *with well defined boundaries,* and it is therefore understandable that the system which they comprise will be fundamentally different *in type* from a miniature solar system. One may also note that the role of thermodynamics is becoming more important in the solutions of the problems of atomic and

[2] This does not mean that either Pythagoras or Aristotle deny that matter has a corpuscular aspect.

[3] The Heisenberg principle of indeterminism represents a crucial point at which these limitations begin to become evident.

nuclear physics. Now a significant characteristic of classical thermodynamics which is of importance here is that it does not posit specific geometrical models representing what goes on. Kinetic theory does do this when it explains heat in terms of slow or rapid mechanical movement of atoms or molecules, but this is not pure classical thermodynamics.

Thus, in the rejection of particles with well defined shapes one may say that modern physics is, on the one hand, moving away from atomistic concepts in the old sense of the term; and, on the other hand, it is also moving away from Pythagorian geometrical ideas.[4] It is with regard to this movement that there is a basis for common ground between Thomism and modern physics. Despite many deep differences between these one may continue to discuss similarities. Neither modern physics nor Aristotle and Aquinas say that structure could not be related to function, and profitably so.[5] The structure of the hand is fundamentally related to its nature, function and purpose; but the shape of the hand is not its nature or function. Similarly, today one realizes the shape and size of bacteria as revealed by the microscope are related to their activities or operations, but their shapes are not their natures. Finally, the size and shape of atoms and elementary particles are related fundamentally to their properties and activities, but the point is that these shapes are not the natures.

Some additional considerations on the general relations between geometry and physics will give additional insight into the relation between structure and operation. Attention will

[4] All quantum mechanics rejects the well defined boundaries of particles. Yet there is a difference between those who following the wave mechanics of Schrödinger still make use of the geometrical notion of a wave, and those who following Heisenberg's interpretation of quantum mechanics avoid this wave notion or give it a statistical interpretation and a pragmatic value in terms of getting to the nature of physical reality.

[5] McKeon, *op. cit.*, *De Partibus Animalium*, 645b 15, "As every instrument and every bodily member subserves some partial end, that is to say some special action, so the whole body must be destined to minister to some plenary sphere of action. Thus the saw is made for sawing, for sawing is a function and not sawing for the saw. Similarily, the body too must somehow or other be made for the soul, and each part of it for some subordinate function, to which it is adopted."

first be given to some recent views of scientists on this thorny problem. First one must note that the tremedous impact of the general theory of relativity on the relation between geometry and physics cannot be over estimated.

> In Einstein's revolutionary conception . . . geometry was no longer antecedent to physics, but indissolubly fused with it into a single discipline. The properties of space in general relativity depend on the material bodies and the energy that are present. Euclidean geometry is deposed from its old position of priority. . . . [6]

A true interpretation of general relativity and the doctrine of the 'curvature of space' which it involves does not mean that there is any containing entity whose coordinates or boundaries are curved but which has no physical properties itself and in which bodies exist.[7] Rather, it means that Einstein discovered that light travels in a curved path and since light's motion is a very fundamental physical phenomenon it is convenient to use a geometry whose coordinates are curved. This geometry, though complex in itself, can be so chosen that physical laws expressed in it will take on a simpler form than if expressed in the Euclidean geometry of Cartesian coordinates. From this one can see the intimate relation of geometry and physics in the modern view. It is unfortunate that the tendency of some has been to emphasize the role of geometry in the close union rather than the role of physics. Be this as it may, in the Einstein view space conceived as a void has no structure and indeed no reality in itself. Geometrical structure can be abstracted by the mind, but the true structure, extrinsic to the mind, can never be separated from material and wave

[6] E. Whittaker, *From Euclid to Eddington*, (Cambridge: At the University Press, 1949) p. 117.

[7] *Ibid.*, p. 40, ". . . what mathematics understands by the word 'curvature' is not what the word connotes in ordinary speech. What the mathematician simply means is that the relations between the mutual distances of the points are different than the relations which obtain in Euclidean geometry. Curvature (in the mathematical sense) has nothing to do with the shape of the space—whether it is bent or not—but is defined solely by the metric, that is to say the way in which distance is defined. It is not the space that is curved, but the geometry of the space."

properties. That is to say it can never be separated from the physical properties of bodies. ". . . space-time cannot exist at all except insofar as it is due to the existence of matter. This doctrine which was substantially due to Mach was adopted in 1917 by Einstein." [8]

It is significant to note that on this point Einstein's position is in accord with that of Aristotle and the scholastics. In the Aristotelian-Thomistic framework full discussion of the relation of structure and operation involves the difficult problems on the relations between the categories of quantity, place and space, on the one hand; and quality and substance, on the other hand. The Aristotelian position affirms that quantity—and thus extension and size—is an accident. It does not exist by itself, but rather exists in substances. Similarly, and consistent with the view of quantity, place and space are accidents. They do not exist by themselves. These Aristotelian views require that although geometry, a pure science of size and shape as such, exists, it is produced by abstracting from other physical properties of the bodies which have size and shape.[9]

Despite affinity with Aristotle as far as the relation between space and matter is concerned, it must be pointed out that ultimately some physicists, such as Einstein, show a Platonic tendency in unduly diminishing or even abolishing the truly distinct identities of the individual bodies which comprise the universe. Thus, they affirm that the curvature of space at a particular place is determined, not by the matter in that place, but rather by all the matter in the universe. Going even further, they affirm that the physical properties of a body, such as its inertia, are also *completely* determined and accounted for by the other bodies in the universe.[10]

[8] *Ibid.*, p. 126.

[9] Since in the Aristotelian view space and time are both accidents of one substance this view is also compatible in some fundamental sense with the view of Einstein that space and time are not to be regarded as unrelated entities.

[10] Whittaker, *op. cit.*, p. 126, "The point at issue may be illustrated by the following concrete problem; if all matter were eliminated except one particle which is used as a test body, would this body have inertia or not? The view of Einstein and Mach is that it would not."

Though the relativity theory may lead one toward a Platonic attitude on this point, the explanations of quantum mechanics in the atomic realm are less inclined to do so, and they tend to retain an Aristotelian position on this point. Thus, in a quantum mechanical explanation of the influence of environment in explaining the dual wave-particle nature of light or matter a rôle can still exist for intrinsic determination on the part of an individual body.[11]

Perhaps fundamentally this is because quantum mechanics attempts to explain physical properties of observed bodies by seeking intrinsic causes primarily. This is because sub-atomic, atomic and molecular phenomena are its primary realm. Quantum mechanics analyses the parts of bodies and the interrelations of these parts. Relativity theory, on the other hand, though it has application in the atomic and molecular realm (when one is concerned with particles whose velocities approach the velocity of light its implications have practical significance) is primarily concerned with the relations between bodies. Its primary domain is in the macroscopic world, and it seeks to embrace all phenomena in its space-time framework. That there is a tension between these two branches of modern physics is evidenced by the fact that investigation in the atomic realm of quantum mechanics reveals events, such as the inferred jumping of an electron from one orbit of an atom to another and the dual wave-particle aspects of light and matter which defy adequate representation in a space-time framework. It is for this reason that many physicists who have pursued closely the field of quantum mechanics have tended toward an operational viewpoint.[12] This viewpoint favors dealing with

[11] D. Bohm, *Quantum Theory*, (New York: Prentice-Hall, Inc., 1951) p. 609, "The question of whether a given object such as an electron acts more like a wave or more like a particle is therefore not determined entirely by the electron itself but depends partly on the environment of the electron." (emphasis mine) Since the appearance of this text Professor Bohm, writing in *The Physical Review* for January 15, 1952, has changed his viewpoint on the philosophical implications of the quantum theory. His position has moved in the direction of Einstein's interest in keeping physics strictly deterministic and amenable to space-time descriptions. Nevertheless it is of interest to note the passages of this textbook.

[12] Philip Frank, *Philosophy of Science*, (New Jersey: Prentice-Hall, 1957)

quantities which are measured, such as energy states, without attempting to construct space-time representations of what is going on in the atom. All agree that because of the uncertainty principle of Heisenberg, it does not attempt to make perfect specifications in space and time of the events which it studies, and, indeed, it affirms that such perfect specifications cannot be made.[13] Furthermore such outstanding physicists as Heisenberg and Bohr stress that some of the events occurring at the atomic level simply do not have ordinary geometical or structural representations in space (or in space-time). In the words of Heisenber: "The ontology of materialism rested upon the illusion that the kind of existence, the direct 'actuality' of the world around us, can be extrapolated into the atomic range. This extrapolation, however, is impossible."[14] Father Cantore in interpreting the implications of the position of men such as Heisenberg notes, "It is impossible to conclude that micro-entities are actually corpuscles or waves in the usual sense of the term and we are not entitled to attribute to them *imaginable* properties of the macroworld."[15]

Though quantum mechanics leads some to the view that the study of properties and operations does not reveal a geometrical structure, nevertheless, it does indicate that these properties do reveal structure in a broader sense. Namely, they reveal a *composition* in physical bodies. The dual wave and

p. 220. Frank describing and quoting the attitude of Neils Bohr toward the physical world as expressed in the principle of complementarity has this note. "We may call a description of particles, waves or similar concepts a picture. Bohr said: Evidence obtained under different experimental conditions cannot be comprehended within a single picture, but must be regarded as complementary in the sense that only the totality of the phenomena exhausts the possible information about the objects.' Such a 'picture' does not exist but we can investigate for every experimental arrangement, the phenomena occuring under these circumstances."

[13] The conflict between relativity theory and quantum mechanics on the point of whether there is ultimately strict causal determination in nature will not be treated here.

[14] Pauli, Wolfgang, (Editor), *Neils Bohr and the Development of Physics,* (New York: McGraw-Hill, 1955) Werner Heisenberg, "The Development of the Interpretation of Quantum Theory," p. 28.

[15] Enrico Cantore, S. J., "Philosophy in Atomic Physics: Complementarity," *Modern Schoolman,* Vol. XXXIV, No. 2, Jan. 1957, p. 83, (emphasis mine).

particle properties of light manifest in different experiments require a duality in the nature of the fundamental entities of which light is composed. The same may be said of the dual wave and corpuscular aspects of such elementary particles as the electron and the proton. Again, the fact that matter such as electrons has both wave and particle aspects is an indication of the radical breakdown of the split in classical physics between matter and energy. The basic situation which permits modern physics not to be self-contradictory in affirming that an entity can have both wave and particle aspects is, of course, the fact that both aspects never appear at the same time. In this regard it would appear that quantum mechanics is compatible with certain aspects of the Aristotelian doctrine of hylomorphism. Hylomorphism is not a structural theory in the geometrical sense of the term, but it does affirm a basic duality in the fundamental constituents of material bodies. Neither primary matter nor secondary matter, *materia quantitate signata,* which the scholastics distinguish in their development of Aristotle are structural terms in the geometrical sense. Though the latter is what accounts for the possibility of extension and structure in material bodies it is not identified with that structure.

In mechanistic physics a sharp distinction could be made between the study of structure and the study of operations or activities of bodies. One of the reasons for this easy separation was that physical bodies were regarded as wholly inert or inactive in themselves, and thus their activities and operations were accounted for by extrinsic forces or by energy extrinsic to the body. There was a deep cleavage between the concepts of matter and of energy. Plank's discovery of the quantum of energy was the starting point of a basic change in this conception of physical reality. His views led to the conception of a fundamental entity in reality that was considered energy and yet possessed momentum which had hitherto only been considered as an attribute of moving matter. This leads to a situation in modern quantum mechanics where studies of the

structures of bodies, in the broad sense of studying the invisible ultimate constitution of bodies, and studies of the operations of bodies are more intimately united.

> . . . all energy, is, in a sense, a latent or potential property of matter, since it represents a potential ability to do work, which is realized only when matter changes its state in interaction with other matter. . . . Nevertheless it would be wrong to think of it as a substance that is added to matter like sugar to water, because energy as such is never found in isolated form.[16]

Evidence of this change is also brought out in the fact that energy and momentum are now regarded as more fundamental physical notions than the classical concepts of mass, position and velocity. This is so despite the fact that in their ordinary mathematical expression the former may at times be expressed as combinations of the concepts of inertial mass (m) and the velocity (v). Thus, momentum is expressed as the product (mv) and kinetic energy or energy of motion as $(\frac{1}{2})\,mv^2$.[17]

What one must note is that the quantum mechanical approach to reality may be regarded as one which seeks reality's ultimate constitution *neither* in terms of an objectified Euclidean geometry, *nor* in an objectified non-Euclidean geometry. Rather, it may be regarded, in the manner men such as Heisenberg do, as seeking its answers in terms of basic physical properties and activities while prescinding from statements about the basic geometrical structure. It can prescind from statements about structure in the static sense and also in the dynamic sense of making precise statements about the paths or orbits of the elementary constituents of bodies. At first it might seem, since many students of the quantum mechanical approach to reality look with suspicion upon geometrical models of the ultimate constituents of reality, that the im-

[16] D. Bohm, *op. cit.*, p. 153.

[17] *Ibid.*, p. 155, "We must therefore think of energy and momentum as properties residing within matter. Properties which cannot be pictured directly which are simply given the names momentum and energy . . . in every respect . . . (they) stand on a footing which is independent of the need for a precise space-time description of the motion of matter."

portance of the rôle of mathematics might be diminished. Nothing could be farther from the truth. In this field mathematical proportion, arithmetic, algebra, differential equations and matrix theory still remain in the foreground. Even the geometrical schemes still retain their pragmatic value.

It must be noted that Aristotle, and after him Aquinas, recognized a rôle for mathematical proportion in nature even when they rejected geometry as the key to understanding nature. Thus, to explain different degrees of hot and cold Aristotle points out that though a fully cold body is hot potentially and vice versa, in bodies of intermediate temperature the situation is different.

> There will result instead an 'intermediate' and this intermediate according as it is potentially more hot than cold or vice versa, will possess a power of heating that is double or triple its power of cooling, or otherwise related thereto in some similar ratio. Thus all the bodies will result from the contraries or rather from the 'elements,' in so far as they have been 'combinde.' . . .[18]

This realization of combination according to mathematical proportion has no reference to geometrical forms. Both Aristotle and Aquinas emphasized, however, that proportion in itself was always an effect of something else—of some characteristic that gave rise to the proportion. This was one of the key roles of form in the scholastic sense. Form was not only a principle of operation but also a principle of organization, including organization according to proportional combination or composition.

In conclusion some mention shall be made of the relation of the problem of structure in the sense of ultimate composition to that of the continuity or discontinuity of the ultimate constituents of physical reality from the viewpoint of quantum mechanics. This is a problem of interpretation still debated in this field. Consider the supposedly discontinuous jumps of an electron from one orbit of an atom to another with the accompanying emission or absorption of energy in the form of

[18] McKeon, *op. cit.*, *De Generatione et Corruptione*, 334 b 5.

radiation. One aspect of the phenomena may be regarded as continuous and another aspect as discontinuous. "In such a transition, the energy changes discontinuously, and yet, the wave function moves continuously from the region of space associated with one orbit into the region of space associated with the other orbit."[19] And yet this may be done without these two aspects being regarded as contradictory. To see how the contradiction may be avoided is of great interest and importance.

> . . . the energy of an electron and its position are opposing potentialities, each of which can be developed into a definite value only at the expense of the other . . . the potentialities associated with the electron change in a continuous way, but forms . . . in which these potentialities are realized are discrete . . . the properties of an electron are in part potential and incompletely defined.[20]

Here one notes what is unmistakably the distinction between potency and act. For the present purpose it is significant to note that these potentialities are not visible or imaginable in any geometric sense. In this respect they are similar to the Aristotelian and Thomistic primary matter and *materia quantitate signata*.

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[19] Bohm, *op. cit.*, p. 160.
[20] *Ibid.*, p. 611.

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BOOK REVIEWS

Summula Metaphysicae. By Allen B. Wolter, O.F.M. Milwaukee: Bruce, 1958. Pp. 189. $3.50.

Father Wolter's *Summula Metaphysicae* is a succinct and systematic presentation of the fundamental positions of a metaphysics *ad mentem Joannis Duns Scoti*, not excluding, however, occasional influences of the mind of William of Ockham. The Latin in which the book is written is clear and readable. The doctrine presented, while based on the teaching of medieval masters, is at the same time a re-thinking of the metaphysics of these masters by a very well-informed and independent mind. Father Wolter is clear, forthright and candid in taking up whatever position he does choose. It is a philosophical pleasure—and challenge—to read him.

After a *Prooemium* announcing his intentions in the present work, the author divides his treatment into an introduction treating the nature and method of metaphysical science, and four parts treating the following general topics: First Part, "On Transcendental Being and its Attributes in General," and on "Unity *in Specie*"; Second Part, "On the Disjunctive Transcendentals"; Third Part, "On Absolutely Infinite Being"; Fourth Part, "On the Other Attributes Simply Convertible with Being." The parts are subdivided into chapters, the chapters into articles. Through an oversight, the division into chapters is a bit confused. Part Two is omitted in the Table of Contents, and the chapter numbering runs continuously through the first two parts. The numbering returns to chapter one in the Third Part, and begins again with chapter one in the Fourth Part. A second edition should correct this inconsistency.

The originality of Father Wolter's order of treatment lies in his extensive consideration of the disjunctively transcendental attributes of being, an approach which he employed in his dissertation, *The Transcendentals and their Functions in the Metaphysics of Duns Scotus*. The notion of the disjunctive transcendental is explained in the opening article of the First Part. It is distinguished from the attribute that is *simply* convertible in that the disjunctive transcendental involves a pair of notions taken disjunctively, which pair is convertible with being, for example, the pairs: finite or infinite, transient or permanent, actual or potential. Only twenty-two pages of the present text are devoted to the consideration of the simply convertible attributes of being, while sixty-six pages deal with the disjunctively transcendental attributes of being.

In his discussion of the method of metaphysics the author explains the transition from contingent propositions to necessary propositions after the

manner employed by Duns Scotus: the proposition "Something exists," as a statement of a contingent fact of experience, can be changed into the proposition "Something can exist" (*ab esse ad posse valet illatio*), a necessary proposition. In this manner metaphysics can fulfill the Aristotelian requirements concerning the necessity of the first principles of science. (This mode of procedure is certainly legitimate; but in the opinion of the reviewer the proposition, "Something exists" is already a necessary proposition if it is considered in its full implication—i. e., "Being exists.")—Father Wolter describes the general character of metaphysical method as *a posteriori* by a *reductio metaphysica*; but this *reductio* is necessary and not hypothetical like the reasoning of the physical sciences. This section is very well presented.

Following the introduction, the First Part is divided into two chapters. The first chapter discusses the notion of the transcendentals in general, and expands the notion to include the disjunctive transcendentals. The second article of this chapter is an analysis of the notion of being, as transcendental. *Ens* is defined (with Scotus) as *id cui non repugnat esse*. This notion is *quidditative*, yet defined with relation to real existence. It represents the first aspect of reality distinctly conceivable, and is minimum in comprehension, maximum in extension. It is knowable in itself,—indeed, it is the most knowable of all abstract notions; yet it presupposes an intuitive knowledge of reality, *as existing*. *Ens*, so conceived, is univocal; yet it is not a true genus, since it is an imperfect concept, conceived without its intrinsic modes, and since it is contracted not by true differences but simply by being considered *with* its intrinsic modes. If *ens* is considered with its intrinsic modes it becomes a perfect concept, and is no longer univocal, but analogical. A third article of this chapter treats "*Nihil*" and "*ens rationis*."

After an explanation of the simply convertible and the disjunctively convertible attributes of being in the opening article of the second chapter of the First Part, the remaining articles treat: Unity and the one; the individual and the universal; identity and distinctions. The author's exposition of metaphysical unity follows the view of Scotus, which admits plurality of formalities without prejudice to unity of being, not only in the case of the metaphysical grades in composite unity but even in the absolutely simple unity of the divine being. In the discussion of the principle of individuation, after a brief exposition of the views of the Thomists, Scotists, Suarezians, and William of Ockham, Father Wolter leans towards the solution of Ockham; although he is quite willing to see merit (and difficulties) in any of the four solutions. He agrees with Ockham that *quaelibet res extra animam seipsa erit haec, nec est quaerenda causa quomodo possibilis est aliqua causa individuationis . . . sed magis esset quaerenda causa quomodo possibilis est aliquod esse commune et universalis.* (p. 31)

It is difficult for the reviewer to see how Ockham's solution meets the basic metaphysical problem, posed as early as Parmenides, as to how the act of being is limited and multiplied. The reviewer also thinks that the objections urged against the Thomist theory of individuation: that it does not explain the individual character of matter itself, and that it ascribes the highest grade of perfection in the order of essence (*scil.* individuality) to matter, the potential principle, can be met effectively by a consideration of the mutual causality of matter and form, and by a consideration of the role of subsistence in the metaphysical constitution of the individual.

The Scotist formal distinction is explained and defended in the concluding section of this chapter. The author points out that the formal distinction was not an innovation on the part of Scotus but is to be found in all the Augustinians of the thirteenth century.

The Second, and longest, Part treats the disjunctive transcendentals. The author selects for treatment: the transient and permanent, the temporal and eternal, the caused and uncaused, the contingent and necessary, the actual and potential, the substantial and accidental, the absolute and relative, the simple and composite, and the infinite and finite.

In the treatment of the transient and permanent there is an interesting argument presented to prove the existence of the absolutely permanent as the required support of the relative permanence, which the author maintains, must belong to any transient reality, in that such a reality must perdure at least long enough to distinguish two non-simultaneous moments of time. In the chapter treating the caused and the uncaused there is an analysis of the notion of causality, a consideration of the relationship of causes as essentially ordered and as accidentally ordered, a proof of the existence of the first uncausable efficient cause (the Scotist proof), and several arguments to establish the existence of secondary efficient causes against the occasionalists. Here the author finds the greatest certitude in the knowledge that we have of ourselves as efficient causes in our willing, attending, striving, etc. He finds a moral certitude ("almost impossible to doubt") in our conviction that we cause our own commanded bodily actions; but it is only held to be very probable that other things are truly causes. The author is willing to accept as true certitude the common sense conviction based on accumulated experience. In a lengthy footnote (p. 58, fn. 11) the author tends towards the position of William of Ockham with regard to *final* causality. The "axiom" of finality, he says, is a conclusion and not a principle, and it is "difficult to prove" unless the existence of God is first proved as the intelligent and willing creator and first cause of all things other than Himself. (To the reviewer this Ockham-like approach to finality appears as metaphysically insufficient; the principle of finality appears self-evident from the metaphysical analysis

of activity, and the indirect demonstration of the principle given by St. Thomas in *Contra Gentiles* (Bk. III, C. 2) appears to be unanswerable.)

The chapter on the contingent and the necessary contains a criticism of the Thomistic notion of caused or derived necessity. In this criticism St. Thomas is seen as taking up a position "midway between the pure Christian doctrine of creationism and the pure position of the pagan philosophers who proposed a plurality of eternal and uncreated beings." (p. 65, fn. 3) The discussion of terminology here is enlightening; but granting legitimate differences in terminology, the reviewer cannot discern in the Thomistic teaching even the slightest wavering on the pure Christian doctrine of creationism.

The chapter on the actual and potential contains a succinct presentation of the basic Scotist position on the different meanings of the actual and the potential, and on the manner in which these principles enter into the constitution of finite being. Any profitable discussion of basic metaphysical issues between Thomists and Scotists must presuppose an understanding of the Scotist definitions of terms set forth in this chapter. The chapter includes a brief presentation of the various scholastic theories on the distinction of essence and existence in actual finite beings, and on the origin of possibilities. Father Wolter declares that the distinction of essence and existence defended by the Thomists is almost the same as that held by those Scotists who see in essence and existence two formalities of the same actual *res*. But that there is an irreducible difference between St. Thomas and any interpretation of Scotus on this point Father Wolter makes clear in his presentation of the Scotist view on the "reality" of subjective potentiality. According to this view Scotus flatly denies any reality to subjective potentiality beyond that of a "real possible" existing only *virtually* in the cause that can produce it. (In Thomist doctrine, on the other hand, subjective potentialities are themselves real as constituent principles of the total reality of which they are parts: prime matter is a real potential principle of the composite substance; the powers of action are real potentialities of the existing substance, really distinct from the substance; the essence of a finite being is a real potential principle, really distinct from the act of existence which actualizes it in the order of existence.)

In the next chapter the definition and divisions of substance are set forth, and the meaning of essence, substance, and nature are explained according to the views of the Franciscan school. The second article of the chapter contains a discussion of the views of Scotists and Thomists on the formal *ratio* of personality. Father Wolter effectively disposes of the objection to the Scotist view that it reduces the *ratio* of personality to a negation. He presents two principal objections against the Thomist

view: (1) the hypothesis of a positive mode superadded to the individual nature is superfluous; (2) this positive superadded mode is a created entity, and as such cannot render the created nature so incommunicable that not even God can assume this nature. The former of these objections proceeds on the assumption that the whole question of the formal *ratio* of personality is a theological and not a properly philosophical question,—that except for the revealed doctrine of the Incarnation there would be no reason for asking the question. A Scotist could accept this assumption without qualification; but a Thomist would make some important distinctions. A Thomist would certainly agree that the unique importance of the individual person is immeasurably illuminated by the revealed mystery of the Incarnation, and that Thomist metaphysics would not be so concerned about the formal *ratio* of personality if it were not a metaphysics worked out in the light of Christian revelation. Having granted this much he would add, however, that in Thomist metaphysics, taken precisely as metaphysics, subsistence plays an indispensable role in the metaphysical structure of the *suppositum*, which role it does not play in the metaphysics of Scotus. Thus what might well be superfluous in a Scotist frame of metaphysics is a necessary element in Thomism. A Thomist would point out, in answer to the second of the above-stated objections, that created subsistence is a participated subsistence, and renders the created individual nature incommunicable only because God works the same formal effect as primary cause. Hence there is no question of any limitation of the divine power.

The third article of this chapter deals with the nature, division and classification of accidents. A lengthy footnote (p. 91 fn. 8) contains the elements of a treatise on the metaphysics of knowledge according to the mind of Scotus. The author points out clearly the Scotist views on the metaphysical status of the powers of knowledge, of the acts of eliciting knowledge, and of the actual knowledge itself. Again, familiarity with these Scotistic notions is essential for the participants in any fruitful and enlightening Thomist-Scotist discussion, or even for anyone who would see clearly and precisely where it is that the two philosophical views disagree.

The eighth chapter treats the disjunctive transcendentals: the absolute and the relative, the simple and the composite, and the infinite and finite. Here we find, among other things, a summary of the dispute among the scholastics (even among Thomists) over the " reality " of real relations. In the concluding article on the infinite and finite there is an interesting discussion of the psychological priority of the notion of the finite, and also a treatment of the necessary dependence of the finite upon the infinite in terms of mixed and pure perfections and the limited and unlimited grades of pure perfections. In this last we see a treatment of participation that

complements the more usual Thomistic approach in terms of act and potentiality.

The Third Part of the work, on the absolutely infinite Being, is divided into three chapters, the first treating the existence and nature of the one absolutely infinite Being, the second dealing with the divine life *ad intra*, and the third considering the divine operation *ad extra*.

Father Wolter presents his principal argument for the existence of God in the opening article of the first chapter. This argument consists in a summary of the preceding analyses of being in terms of the disjunctively transcendental attributes. It proceeds in three main steps, the first step establishing the existence of the *ens a se*, the second establishing the infinity of perfection of the *ens a se*, and the third establishing that the *ens a se* is unique and individual. Father Wolter's *argumentum principale* is indeed a model of demonstration, summarizing cogently the findings of a lengthy metaphysical analysis, and not merely opening up lines of reasoning in a general way as the Five Ways of St. Thomas are content to do. This difference, in the reviéwer's opinion, is the best answer to a great part of Father Wolter's criticism of St. Thomas' arguments, criticism presented in the second article of this chapter. The Five Ways are brief statements of basic lines of reasoning, upon which large sections of the First Part of the *Summa Theologica* (QQ. 3 to 24, 44 to 49, and 103 to 105) constitute a more developed commentary. Another part, however, of the author's criticism of the Thomistic arguments is, in the reviewer's judgment, untenable—that part, namely, which is based on the rejection of the principles: *Quidquid movetur ab alio movetur*, and *Omne agens agit propter finem*. The author writes of the First Way of St. Thomas that although St. Thomas called it the *prima et manifestior via*, nevertheless today this same First Way *communiter accipitur propter crisin Scoti ut debilissima*." (p. 116) (There has been much adverse criticism of the First Way on the part of those who interpret it as a physical argument; but those who interpret the First Way metaphysically—the correct interpretation, in the reviewer's judgment—have no difficulty in defending it against objections.) The arguments of St. Anselm and Duns Scotus are also reviewed in this chapter. It is observed that any attempt to strengthen the *ratio Anselmi* changes the argument from *a priori* to *a posteriori*. The argument of Duns Scotus, as given in the *Ordinatio* and the *De Primo Principio*, is characterized as the most complete and logically satisfying of the scholastic arguments, yet Father Wolter observes: *Non obstantibus his qualitatibus excellentissimis, argumentum mihi praesentat aliquas difficultates, nempe quoad methodum probandi et Dei infinitatem et primitatem in ordine finalitatis*. (p. 121)

The third article of this chapter is titled: "On the knowableness of God." Here, after defending the validity of a knowledge of God in the

light of natural reason, the author presents a criticism of innatism, ontologism, illuminatism, traditionalism and modernism. This is followed by a detailed review of the controversy between Thomists and Scotists over the question whether transcendental being is univocal or analogical. A Thomist would not agree with the author's contention that "all analogical knowledge presupposes some previous knowledge of the analogates" (p. 128); but any Thomist who wishes to appreciate his own position more thoroughly must be familiar with the views exposed here, and must also be ready to defend the Thomist position against the objection (raised by the author) that it creates grave difficulties with regard to the unity of the concept of being. The article concludes with a presentation and criticism of both the Thomist and Scotist views on the metaphysical essence of God.

In the second chapter of the Third Part, dealing with the divine life *ad intra*, the author, having first established that God is intelligent, proceeds to show the properties of divine knowledge in customary scholastic fashion. Controversial ground is entered only with the introduction of the question: How does God know future contingents? The author reviews briefly the teaching of the Thomists and the Molinists, and then exposes his own preference for the view of Ockham according to which "it is impossible for any created intellect to express in this present life how God knows all future contingents." (p. 137) The contention is advanced that the teaching proposed today as Thomistic, that is, the system developed by Dominic Bañez, O. P., in the sixteenth century, is not that of St. Thomas but is founded rather on the opinion of Duns Scotus. St. Thomas, we are told, held that God knows future contingents by reason of the presence of all things past, present, and future, to His eternity. The author goes on: *Scotus potius quam Thomas opinavit Deum cognoscere creaturas actuales per decreta suae voluntatis. Sententia Banesianorum fundatur in ista opinione Scoti cui additur illud principium a Scoto rejectum, scilicet, quidquid movetur ab alio movetur.* (p. 137 fn. 2) Two difficulties are proposed against this "Banesian teaching": that it does not preserve human liberty, and that it makes God appear as the author of sin. The Molinist teaching is described as preserving human liberty better than the Thomistic view, yet as open to the criticism that it seems to make God wait upon human liberty. *Nam videtur Deum debere expectare quid homo liber facturus sit.* (p. 139) But perhaps this difficulty would be removed, the author adds, if God's eternity were better known by us.

In answer to the contention that St. Thomas did not teach that God knows future contingents in the divine decrees a Thomist will quote the *Summa Theologica*, I, Q. 14, a. 8, where God's knowledge is said to be the cause of things *in so far as His will is joined to it*. And the same Thomist

will marshal a whole battery of texts and arguments to refute the objection that the Bañesian-Thomistic teaching does not safeguard human liberty and makes God appear as the author of sin. The reviewer does not feel called to cover that ground here.

A second article of this chapter treats the divine life of love. The author thinks it very difficult to prove an integral life of love in God, if we hold love to be of the will, and hold the will to differ from all other agents in that it acts freely and not by nature. Hence he offers philosophical arguments here with a certain diffidence: they are given as *saltem philosophice probabiliora quam eorum opposita.* (p. 140). Three arguments are presented: the love of perfect being seems to be a pure perfection, hence belongs to God in the highest degree. Happiness seems to be a pure perfection, and love appears to be the principal element in happiness. God as the first cause of love in us must possess the same perfection in Himself. Father Wolter concludes his treatment of the divine love with a brief reference to the teaching of Scotus that the act of divine love is spontaneous and proceeds, not according to the manner of nature, but freely, i. e., after intellectual knowledge. Concerning this view of Scotus the author observes wryly: *Sed si aliquis possit istud capere, capiat.* (p. 141) The reviewer finds no insuperable difficulty in the notion of an activity which is necessary, and yet not natural but free—in the sense that it is not forced or constrained.

The concluding chapter of the Third Part treats the divine operation *ad extra.* The author proves God's omnipotence from His infinite perfection. He disagrees with the view of Scotus and Ockham that the "immediate" omnipotence of God cannot be philosophically demonstrated. Four arguments are given to prove free will in the divine operation *ad extra:* from the existence of evil in created things, from the independence of God, from the existence of contingent causes, and from the truth that to freely cause is a pure perfection. The second article of this chapter deals briefly with creation, divine conservation, divine concourse and divine providence. The author simply notes here the different interpretations of the *concursus immediatus.* For the rest, there would be little difference among scholastics on the matter presented. There is a concluding note explaining the sense in which Scotus held that special divine providence escapes philosophical demonstration.

In the Fourth Part the author, having proved the existence of God, proceeds to treat the universal intelligibility and appetibility or lovability of things. Ontological truth, the author holds, consists simply in the property of real being by which it is intelligible. He rejects the view that ontological truth consists in the conformity of things with intellect, either with the exemplary ideas of the divine intellect, or conformity with any

intellect actually knowing the thing. He does not deny the existence of the divine exemplary ideas, or that things are conformable to these exemplars; but he denies that the ontological truth of things can consist in anything outside the things themselves. The convertibility of *ens* and *verum* is said to be a conclusion dependent on the proof that God knows all things. Some would wish to show this convertibility simply from the nature of the intellect as the faculty of being; but Father Wolter doubts whether it can be shown philosophically that being is the object of the intellect. The reviewer, who holds that being is given to the intellect in its primary operation as its natural object, and that this object is made clear and explicit by philosophical reflection, does not see how metaphysics itself could remain secure if Father Wolter's doubt were seriously entertained.

The closing chapter deals briefly with ontological goodness, and also contains a metaphysical analysis of evil, and a treatment of the beautiful as an attribute of being. There follows a compendium of the conclusions reached in the course of the work, one hundred in number. There are also nine pages of questions for review, six pages of bibliography (including many articles from current periodicals), an *index personarum* and an *index rerum*.

All in all, Father Wolter's *Summula Metaphysicae* is a vigorous, forthright and living presentation of the views of a modern scholastic who leans towards Scotism but believes in thinking for himself, and who is capable of presenting his views and his arguments succinctly, clearly, forcefully. Thomists will find this compact work a stimulating intellectual experience, and also a challenge to deepen the basis of their own philosophical position.

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Modes of Being. By Paul Weiss. Carbondale: Southern Illinois University Press, 1958. Pp. 617 with indexes. $10.00.

Common problems face those who would offer a universal explanation of being. One is the need to rationalize the origin or derivation of dependent realities. Related to this is the requirement that the derivation of the many from a posited universal principle be rendered intelligible. This in turn calls for an account of multiplicity and the otherness of things. As well, the oneness of each being with itself must be explained. There is also the necessity that, within the limits of their dependence, the true reality

and causal power of things be safeguarded. The actual exercise of causality on the part of any universal principle must also be accounted for; correlatively, the cosmic status, the necessity or contingency, the ontological function and significance of dependent realities must be determined. At this level, too, the relations among all beings and the kind of unity had by reality as a whole, demands analysis.

Modes Of Being, a work in which Paul Weiss presents his developed metaphysical doctrine, is largely devoted to the solution of these and allied problems. Reasonably, too, its criticism of other philosophies turns upon stated deficiencies in their answers to the same problems. The title of the work is accurate; the " modes " in question are both the exhaustive divisions of being and its explanatory principles. They are four in number: Actuality, Ideality, Existence and God. Characterized in general terms, Actuality is the realm of individual natural substances; Ideality that of essence, intelligibility and value; Existence that of existential actuality and causal power; while God is the providential being and that in which the other modes have their unified reproduction. The genius of the author's doctrine is suggested, first of all, in the existential status attributed to these modes. Each is seen as a distinct and subsistent reality, " independent," " final," possessed of " its own nature and integrity," and, most important, " irreducibly ultimate." (pp. 11, 13, 16, 277-8) It is the irreducible and subsistent status of every mode that gives distinction to the next element in his system. This is his position on the relationships among the modes. Each mode is such that it needs the others to supplement its own reality, and each is such that it must contribute to the requirements of the others.

The contributions of each mode are necessarily varied. Actualities " determine " the Ideal by individualizing it and giving to it a full-bodied being in nature. (pp. 26, 33, 121) They serve to limit Existence and partially to unify it. (pp. 33, 188, 377) They function as the " relative other " of God and as that whereby he " manifests " himself. (pp. 183, 338, 538) They also bring about determination within the Ideal in this latter mode's separate existence. (pp. 109-10, 181)

The Ideal—or Possibility—, whose derivitives are " logical possibilities, specific essences and real possibilities," acts " to master Actualities by turning them into types, meanings, representatives of itself." (pp. 14, 27) In its guise of the Good, it also presents " relevant, essential objectives " to Actuality. (p. 14) As the Future, it gives direction, stability and intelligibility to Existence. (pp. 122, 181, 186) As the Principle of Perfection, it is the standard against which the activities of God are judged. (pp. 122, 343) It is, indeed, that which measures the " worth of all else." (p. 343)

Existence, an "energizing field," is the source of existence and power within the three other modes. (pp. 14, 188, 202) It enables Actualities to be related and co-present, God to be effective everywhere, and the Ideal to have a "cosmic reality." (pp. 27-8, 272) It permits each of the other modes "to stand away from all the others" and thus to enjoy a distinct reality. (pp. 185, 197) At the same time, it brings about unity among all the modes: "The Existence which Actualities have is a part of the whole Existence. While remaining over against, it is continuous with the Existence which is resident in and peculiar to every other Actuality (as well as to Ideality and God)." (p. 223)

God, the providential agent, "sees to it that the Ideal is realized and that Actualities are perfected." (p. 15) He sustains Actuality as its "Absolute Other"—"By virtue of its contrast with God, an Actuality is a genuine being in itself." (pp. 289, 534) In a manner appropriate to each of the other modes, he is the source of its unity; thus, for example, he manifests Existence by imposing an essence upon it. (pp. 197, 271, 290) He is therefore the "unity present in all things." (p. 361) His ability to reproduce within himself "whatever else there be" gives to the other modes an added vicarious unity. (p. 344)

These do not exhaust the functions of the modes. Each presents a "norm" which the others seek to realize: "The Ideal presents a norm in the guise of a value, the Actual one in the guise of individuals, Existence one in the guise of activity, and God one in the guise of unity." (p. 540) Each mode also has a role to play with respect to the "total cosmos." From Actuality the cosmos draws "a kind of life," from the Ideal "a sort of structure," from Exstence "something like a career," and from God "some unity." (p. 278)

Two precisions are needed to complete the doctrine's preliminary outline. Both concern the way in which the modes are present to one another. Most frequently, each mode is held to be "integral" to and "interlocked" with the others; indeed, the "togetherness" of all the modes is a dominant theme. (pp. 16, 114, 184, 518) Descriptive phrases such as these abound: "all merge with and qualify one another"; each is a "component" of the others; they are "ingredient in one another"; each is in the others by "internal presence." (pp. 16-7, 235, 277, 357-8) Here the modes function as the very transcendental attributes of all things. At other times, however, Prof. Weiss denies that any "mode of being possesses the others in their full concreteness . . . or as substances ingredient in it." (pp. 278-9) Each mode, rather, is "affected in nonessential ways" by the others; each is in the others as a "nonessential trait" or "attribute." (pp. 232, 280-1) On this reading, the modes appear as the extrinsic sources of the transcendental attributes.

In any case, the union of the modes, along with the illustrations of their specific contributions and needs, is held to justify the work's decisive thesis: "Each mode of being is real in itself because it is interlocked with others, enabled to be by virtue of the fact that its reality is inseparable from theirs. Only because each is conditioned by the others is each able to be at all." (p. 30)

The apparent accomplishments of the doctrine are thus considerable. The posited "interlocking" or "merging" of the modes serves as one point of departure. Most evidently, it gives rise to the unity of the cosmos, a unity further secured by Existence and God. It also guarantees to each mode an unchallengeable hold on reality: each possesses as its "components" the very root sources of existence, unity, intelligibility, individuality, causal power and purposeful activity. It is through their merging, too, that each mode functions as a universal cause with respect to the others. As well, the exercise of causality on the part of the modes is thereby explained: each is driven by its ontological needs to reach out to and unite with the others, and in so doing it gratifies the correlative needs of these others. Moreover, as a required integral part of the universe, each balances its dependence on the others by a necessary contribution of its own and thus secures for itself a dignified status in the cosmic economy.

The "nonessential" presence of each mode in the others is also necessary to the scheme. No mode is wholly aloof and autonomous; but, equally true, none has its reality exhausted by any or all of the other modes; none is an arbitrary and gratuitous offspring of another. None, in a word, is reducible to any other. Prof. Weiss wages unremitting battle against all doctrines which attribute to any of the modes a simply derivative or creaturely status. No mode, he states time and again, can be considered a "delimited version" of some other being. (pp. 121, 179-80, 192, 377) The ultimacy and finality of each and every mode is demanded, in fact, if its contributions to the others, and their need of it, are to be real.

Of course much remains to be spelled out. It must be shown that each mode is capable of the quasi-independent existence it is said to have, and that the needs of the other modes require it to be a distinct and irreducible entity. The burden here lies heaviest with respect to the Ideal and Existence. As might be expected, recourse to them as separate realities is had because of the stated impossibility that God be the ultimate source of Actuality's quidditative and existential acts. The basic argument is that were God the creator and that upon which the continued existence of other beings depended, the true reality of these other beings would be effectively destroyed. This fear for the reality of others also appears when Prof. Weiss considers whether God is the perfect being. In the traditional sense, he is held to be precisely that. Consistent with his role as the providential

being and with his power to reproduce internally all the other modes, he is said to be " omnipotent " and possessed of an " infinite," " all-inclusive " and " cosmic " essence. (pp. 184, 319, 335, 344) However, it is denied that he, or any mode, possesses " maximum or absolute perfection, complete, exhaustive reality "; this, because there is another " mode of being with a reality of its own." (p. 29) The view of God, equated simply with that of tradition, as " containing within himself all excellencies and realities . . . makes it impossible to acknowledge the independent reality and excellence of anything else." (p. 349)

Now, the same difficulty is held to arise within the doctrine of creation: " According to Thomas Aquinas . . . while God's essence *is* his existence, all other beings only *have* their existences, and then only because and while God bestows it on them. The hard question for the Thomist is then whether or not I, with my own peculiar fragment of existence, do not in fact stand over against God with his Existence. The Thomists sometimes speak as though they meant to hold that all Existence is God, in him or from him. But it is not clear then how I can exist." (p. 191) The significance attributed to this argument is revealed by its repetition throughout the work. (pp. 185, 222, 339, 345)

There is another objection to God as creator, that relating to the problem of the One and the Many. It is, the author states, " hard to see how a plurality of places, moments, energies, and beings can be or have their source in an individual eternal unity which is, according to their (the Thomists') doctrine, always the same." (p. 191) Later, while formally treating of the relation between the One and the Many, he considers the view that starts with a One and draws the Many from it. To this he replies: " The One allows the Many to be over against it—or fails to produce a Many. But then it must minimize itself in order to give some being or meaning to that Many." (p. 505) The necessity that the One " minimize " itself in order to produce the Many is not established. However, one reason for it has already been implied. Were there a One prior to all other beings, it would clearly possess " complete, exhaustive reality," and so others would have reality only if they shared materially in that of the One. This suggests the notion of causality held by Prof. Weiss.

The above problems, together with certain subordinate arguments, lead him to posit the two distinct modes of Ideality and Existence. The subordinate proofs of the Ideal are many, but three, bearing primarily upon Actuality, are most relevant. One concerns the Ideal as Possibility, the guise that it assumes in relation to the other modes: " Real possibilities have a being exterior to Actualities. *Otherwise the Actualities etc. could not be or become.*" (p. 416) The second proof relates to the possession by many Actualities of a common nature: " Every Actuality

sustains a meaning, a universal which in itself has a greater scope than that which the Actuality provides . . . Because there are such meanings, not wholly reducible to the Actualities, Actualities provide testimony to the effect that there are meanings apart from them." (p. 179) In its guise of the Good, the Ideal is thus proved: "It has a nature of its own, as is evident from the fact that it is striven for." (p. 14)

The similarity of this mode to Plato's Ideal order is acknowledged by the author. However, unlike that of Plato, which was "itself perfect, complete, wholly determinate," that of Prof. Weiss is "somewhat indeterminate." (pp. 11-12) It is such of course with respect to its subsequent presence within Actuality. But it is also indeterminate in its own order; for the manifold possibilities and universal natures are not given all at once—they emerge over the course of time. Though "internally one . . . single and undivided," (pp. 95, 179) the Ideal is also capable of being "divided into limited possibilities pertinent to the particular things in the world," and so "contains a plurality of stresses (or "distinctions") relevant to Actualities and the other modes of being." (pp. 300, 332) These divisions or distinctions have their origin in the other modes: "Within the Ideal there are creases and foci which precipitate out as limited objectives under the pressure of appetitive beings." (p. 205) An illustration of such a "precipitated" possibility is that of jet plane explosions: "Not until we have actual jet planes are there possible jet plane explosions. While jet planes are only possible, jet planes are but facets of these possibilities, without distinct natures of their own." (p. 110) The function of the Ideal conceived as capable of taking on successive determinations is evident: it is thereby proportioned to any given universal nature that might be assumed by various Actualities. Thus, in the order of quidditative act, the problem of the One and the Many is overcome. Added advantages are that the intimate relationship between the Ideal and Actuality is revealed and that a meaningful autonomy is assigned Actuality, for it is not subjected to an arbitrary imposition of forms by an alien power.

The mode of Existence is also defined in such a way as to preclude difficulties arising from the presence of many authentic existents. The arguments in favor of its distinct reality are varied. It is, as previously noted, the source of the other modes' "power of action," their "vitality" and their enjoyment of "careers" not implied in their respective "ideas." (pp. 27-8, 192, 194-5) Our acquaintance with it is also seen as immediate. First, we know what it is "for something to exist rather than not to exist." And we are also held to know it "quite well as an independent domain in which Actualities are embedded and which relates them as contemporaries and keeps them abreast in time." This view "stands in opposition to the position of the Thomists who suppose that Existence can never be known apart from any individual being." (p. 198)

Implied in the above are the various characterizations of this mode. The source of the power and vitality, the actuality and "careers" of others, it is itself a "vital . . . energizing" entity, "pulsating, onrushing," "sheer vitality" and "duration." (pp. 26, 121, 185-6) An "independent domain," whose derivatives are "spatial regions, time and flux," it can be "divided endlessly into parts." (pp. 27, 186) It is this divisibility that allows for the true and distinct reality of the other modes: "By encapsuling a portion of Existence within the confines of its own nature, each entity is enabled to stand away from all others at the same time that it is caught within the wider realm of Existence." (p. 185) The notion of Existence as an extended and fluid stuff, in both its proper being and as possessed by others, also appears here: "To persist an Actuality must re-exist . . . It is an existent Actuality which re-exists, which lays hold of a portion of the Existence now moving into the future and makes this its own—an effort which does not require the Actuality to give up the Existence it has and which may result in the repossession of just the portion of Existence it previously had." (pp. 224-5)

Corresponding to our knowledge of it in terms of the existence and non-existence of things, Existence has another important attribute. This is its determinability, which presumably enables it to function as the proper existential act of a being. Thus: ". . . each Actuality encloses a fragment of Existence and structures it in ways other Actualities do not." (p. 223) Again: "Existence in an Actuality is subjugated by it to some degree"; otherwise "it would be an Existence which was not integral to unique beings." (p. 231) Then, in connection with the "re-existence" of an Actuality, the author notes: "What it has of Existence two moments together cannot, strictly speaking, be described as having the same or different nature in itself, for it is the Actuality which gives that portion of Existence whatever nature it has." (p. 241) Accordingly, the requisite proportion between an individual Actuality and Existence, the very substance of reality, is achieved. Each has its separate "fragment," and one moreover that is truly its own, its proper actuality. This is true as well of the other modes, each of which provides "a distortion, a kind of curvature of a common Existence." (p. 189)

The central themes of the doctrine are now in place. What is to be made of them?

The heart of his scheme is that every mode requires the others if it is to exist. Often, as each mode is defined, this interdependence is satisfactorily demonstrated. Since each functions as one or more of the transcendentals, this is not surprising. There are exceptions, however. God and the Ideal may need Actuality if they are to be manifested in nature, but their proper existence hardly depends upon this; it is, in fact, presupposed

to it. God's need of the Ideal is equally questionable, for his existence does not derive from his being judged excellent in terms provided by the Ideal. And even here there is a problem: since God has an all-inclusive essence, he has no need of an exterior standard by which to measure himself and his actions. Then there is the asserted dependence of the individual Actuality upon God as its Absolute Other. This is to treat the transcendental *aliquid* as though it were in some fashion directly causative—which would have some meaning within a doctrine of creation, in which God would be viewed as sustaining the creature in its distinctness, but it has no such meaning at all for Prof. Weiss.

A far more serious difficulty arises when the modes truly require one another for their existence. The problem stands out most clearly in relation to the mode of Existence. This mode requires for its reality a unity that is derived principally from God. The author is explicit on this point: Existence " persistently repossesses him as the unity which it needs in order to be at all." (p. 192) But God (and the other modes) is nothing apart from Existence; he is simply not given in himself. Therefore he can contribute nothing to Existence. Nor can Actuality and the Ideal. And since there is no being above the modes which might produce them in their requisite *togetherness*, none will possess reality; each will be a simply possible being. Prof. Weiss may see the statement that each mode is in the others as a " nonessential trait " as somehow preserving their equally necessary independence. But—to ignore the contradiction that this view would contain—it does not. The reference of the other modes to Existence as outside them, or even to the " portion " of it that each contains, might well be called " nonessential " in one sense of this word. It remains that their dependence upon it is unconditioned—as is, in the mind of Prof. Weiss, its dependence upon them. The irony is evident. For the sources of the dilemma are his intuition of the " irreducible ultimacy " of each mode, his conviction that every mode, precisely as distinct and underived, is demanded by the very structure of reality, and his refusal to grant that there is a wholly autonomous and self-sufficient being which is the cause of all else.

His position on Ideality is also productive of difficulties. They derive, first of all, from the presence within this mode of many possibilities—the " stresses, creases and foci " which render it proportioned to the events and beings within the other modes. If these are held to be merely logical distinctions, as he would apparently have it on one occasion, their similarity to the divine ideas becomes evident. Thus his strictures against God, the " eternal unity," as the source of the many, and his arguments in favor of the Ideal as a separate locus of quidditative act, come to nought. But if they are taken as actual divisions, as a true multitude, the unity of the

Ideal, and therefore its existence, is destroyed. On this supposition, moreover, there is the problem consequent upon attributing actual reality to the possible—a reality other than that which it would possess in a universal agent. In answer to this, the author holds that Existence is not predicated of the Ideal in the same sense that it is of Actuality. (p. 200) However, when he explicitly considers the " realization " of the possible, its simple opposition to the actual is clear. If, he notes, " there be no realization of possibilities, nothing really becomes, and there is no transformation of what might be into what is." (p. 113) And just before noting the distinctive existence of the Ideal, he said: " Nothing can be added to the possible to turn it into an existent—unless it be Existence." (p. 200) If, in spite of this, he insists that the possibility does have a distinct actual existence, another problem arises. Prior to its existence in some ideal realm, the actual possibility must have been either simply possible or an existent in yet another mode. If simply possible, why must the possibilities in the ideal realm have actual existence? If an existent in yet another mode, an infinite regress awaits.

Another challenge to the independent reality of the Ideal is implicit in the author's position on the emergence within it of the many determinate possibilities. These, he affirms, " precipitate out " as a result of activities within the other modes. They are also presented as determinations that another mode " carve(s) . . . out of the undifferentiated possibility." (p. 111) Thus, though ostensibly the source of quidditative acts in others, the Ideal is itself the recipient of these acts. In itself then the Ideal is the equivalent of prime matter, and in its actual being is the derivative of the other modes.

For discernible reasons, Prof. Weiss would prefer to characterize Existence as similar to prime matter. (pp. 33, 185) This is no doubt seen as consonant with his view of it as a " stuff " able to be divided into portions and susceptible of determination by those that possess it. The analogy is necessarily inexact, for the other definitions of the mode are incompatible with the nature of simple potency. As an energizing field, its origin in contemporary physical theories is apparent. As " an independent domain in which Actualities are imbedded," it is plainly confused with reality as a kind of whole, owing, perhaps, to the equivocal status of the word " existence." As an onrushing, pulsating entity forever moving into the future, it has its roots in metaphor. As sheer vitality and duration, it is suggestive of God in the Aristotelian-Thomistic tradition. And as known in terms of the existence of Actualities, it is most akin to existential act. Clearly, however, it cannot be all these. Proceeding from the most evident, the existential act of a being is not itself a thing. Nor can sheer vitality and duration, taken as the equivalent of subsistent existence, be susceptible of

determination and physical division. Thus little remains of the author's thesis on Existence. It is also impossible to maintain the unity of the mode and its role as a physical bond among all beings. For these are one with the view of Existence as an extended and fluid something absorbed by all being and filling every crevice of the universe. He has not penetrated the truth that the existence of each being is its proper actuality and so simply different from every other. But given this, it is unreasonable to speak of " common Existence " as though it were something that possesses a strict unity.

Left to be considered anew is the position of Prof. Weiss on the derivation of being, or the way in which the being proper to each mode is shared by the others. This occurs, we are told, by virtue of their interlocking, their merging, their entering into one another as components: " Ingredient in one another, the modes of being give reality to one another." (p. 277) Only in one instance, to be sure, does this approach find adequate verification. But the case in point, that of Existence, is illuminating. The only way in which he can rationalize the possession of existence on the part of another is to assume that it lays hold of a portion of subsistent vitality. This commitment determined his thoughts on God as creator. Were God to create, he could do so only by " minimizing " himself, that is, by giving to another a part of his own being. These views suggest that material causality is alone intelligible to the author. It is as though he had no grasp of efficient causality, in which a being communicates a distinct act to another. This restriction upon his thought is also detectable in his statements on essence. The determinate possible natures are presented as being " carved out " of the Ideal and then " transported into another realm or existence." (p. 113) His notion of causality may well be the fundamental reason for the positing of four irreducible modes of being (though lying behind the position on causality is undoubtedly his single standard of reality, according to which the substance of *every* being must be a composite of all that is by its essence real—for the notion of a simply dependent being is abhorrent to him). If initially there were only a One, the Many could arise only as a result of its material division; and this would not only be inexplicable but also preclude true differences in kind: the Many would be simply " delimited versions " of the One. As it is, however, existence is not essence, neither of these is the natural substance and none of the three, as defined, is God. The rest follows. The ontological deficiencies of each of the modes demand their " togetherness " as a condition of their existence. No mode of itself could be *ens, res, unum, aliquid, verum* and *bonum*.

However, Prof. Weiss is unable to maintain his tacit rejection of the communication of act. It is implied, for one, in his assertion that deter-

minate possibilities emerge within the Ideal owing to the " pressure " of the other modes (he would of course wish to interpret each distinct possibility as having a portion of the substance of pure quiddity). It is also implied when he seeks to account for the possession by many Actualities of a universal nature. How is the given universal nature, numerically one and having its own distinct existence in the ideal order, to enter into the many? How, unless there be many individual natures, is the nature of this or that Actuality to be truly its own? To overcome this problem, Prof. Weiss calls upon God. It is he who " alone allows universals to be sharable and individuals to be private, and provides the power making it possible for these two dimensions to be together without loss to the integrity of either." (p. 290; also pp. 338-9, 534) But, needless to say, it is not numerically the same nature that is in the many, nor are the many individual natures the product of a material division of the universal. Thus the divine power of which he speaks can only be the power to communicate to the many an act that is formally one, which is the only kind of unity found here. Accordingly, he must acknowledge a derivation of reality that is not reducible to a species of material causality. (He must also acknowledge that the mode of Ideality is utterly superfluous.) A like argument will apply to existence. Since the existence of an Actuality is neither one with nor a part of subsistent existence, it can only be a communicated act. This may run counter to the author's notion of what it is truly to exist, but the fact must be accepted. And should he examine the reasons for identifying pure essence and subsistent existence, whatever objections he might now have to a creative God would surely vanish.

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Systematic Theology II. Existence and the Christ. By PAUL TILLICH. Chicago: University of Chicago Press, 1957. Pp. 187, with index. $4.50.

When Catholic and Protestant thinkers gather for serious talk, their conversation, someone recently observed, is seldom theological. If this comment is true, one reason for the anomaly may be the difficulty of finding a common language, even a common type of thought-linking in areas beyond those where practical necessity forces some clear thought and plain expression.

The Protestant theologian, Paul Tillich, revealing himself in the first two volumes of his *Systematic Theology*, finds value in thinking about being as being; he finds value in technical terminology for precision of

thought and communication; he holds, and shows, that such philosophy can really be linked somehow with Revelation.

Yet more, he demonstrates that such systematic thought must begin with careful, detailed observation of real things; he lays out remarkable fruits of such observation—his own and that of thinkers from Parmenides to Heidegger. He finds that people are not what they should be; that this " estrangement " from their true selves is not entirely the fault of each but rather is, to some degree, simply in each when he is born; that mere legal codes and commands offer precious little help in overcoming this estrangement; that men cannot by their own efforts overcome it; in fact, that men cannot even know the remedy without revelation; that this estrangement is removed only by some ontological change which must be caused by someone other than the helpless men; that this change can be called a " New Being "; that in this New Being the center of man's person is restored and healed and rightly related to his " ultimate concern," and this chiefly by means of love; and that the bearer of this New Being is Jesus as the Christ.

Does Dr. Tillich mean by all this what Thomists mean? No, not all; very little, in fact, beyond the face value of the listings. Yet some may see that list as remarkable for its shrewdness of induction and coherence of structure. Yet after a first reading, especially of volume two of *Systematic Theology*, the Catholic thinker may conclude that certain theological chasms make attempt at communication too laborious, since they are wounded when they find, not merely shadowy substitutes for original sin and the Incarnation, but on a homelier level, an over-quickness of conclusion, an impatience with putting down and considering all possible and relevant (and famous and traditional) solutions; an overhastiness of judgment which sometimes leaves telling research untouched.

For example, Dr. Tillich practically equates sacramental causality with salvific efficacy of adherence to dogmas. (pp. 84-85) For him, both sacrament and adherence finally operate in much the same way; and, for him the sacrament as such is the sole cause of its effect. In his consideration we find no pause for distinguishing instrumental from principal causality; no inquiry into even the psychological reasons for sacraments (reasons rooted in the existential man Dr. Tillich so well analyzes); no stop to attempt refutation of Scriptural passages unfavorable to his position such as, " Believe me, no man can enter into the kingdom of God unless birth comes to him from water, and from the Holy Spirit "; (*John, 3, 5*) and " Then he took bread, and blessed and broke it, and gave it to them, saying, This is my body, which is to be given for you; do this for a commemoration of me." (*Luke, 12,* 19)

Again, this over-quickness will deter Thomists when they consider Dr.

Tillich's use of Sacred Scripture. He can hardly, they will say, have weighed the merits of published Catholic Biblical research on such titles as "Son of God," "Son of Man," and "Messiah." (p. 139) Further, in his evaluation of the validity of the Scriptures, he seems inconsistent. For example, without indicating reasons for shift in criteria, he appears to take as historical fact the Confession of Peter, (p. 97) a fact basic to his interpretation of Jesus as the Christ, while he rejects the historicity of the Resurrection as an hysterical phenomenon of the early Church. (pp. 153-161) This procedure seems unscholarly (and its conclusions hardly Pauline); it will repel Thomists.

Yet before, on theological grounds, they turn from Dr. Tillich as "confusion confounded," Thomists may recall that this Protestant theologian's almost original qualification in our times is precisely the one that makes him worthy of sweat towards dialogue: he things philosophy and revelation are somehow connected; he claims an ontology; his ontology has some real consistency; he ventures even to use certain Thomistic terms—in one place with open approval. Can it be here, on the ground of philosophic terminology, that Thomists may make a move towards profitable conversation? The job will involve a sorting of terms, a matching, a discovery of relationship, divergencies; a marking out where largest contrasts lie.

Already Gustave Weigel, S. J., has, among so many other valuable actions, begun this sorting. He has analyzed Dr. Tillich's term *symbol* and compared it with Thomistic *analogy*. (Gustave Weigel, S. J., "The Theological Significance of Paul Tillich," *Gregorianum* XXXVII (1956) 51-54.) And there may be evidence in volume two of *Systematic Theology* that Dr. Tillich has now clarified *symbol* and related it yet more closely to *analogy*. (pp. 9-10) However, one might question his consistency with his own analysis, especially when he uses *symbol* in discussing Incarnation titles. (p. 139)

With obvious erudition, Dr. Tillich employs other terms integral to Thomism—among them, potentiality and act. We may inquire here if the Tillichian and Thomistic meanings are the same. Dr. Tillich introduces these two terms in his etymological analysis of the word *existence*. To exist, he says, is to stand out of nothingness. This nothingness can be either absolute non-being or relative non-being. Relative non-being is potential being, a not-yet-being. "But it is not nothing. Potentiality is the state of real possibility, that is, it is more than a logical possibility. Potentiality is the power of being which, metaphorically speaking, has not yet realized its power. The power of being is still latent; it has not yet become manifest. Therefore, if we say that something exists, we say that it has left the state of mere potentiality and has become actual. It stands out of mere potentiality, out of relative non-being." (p. 20)

These sentences seem to view fairly that fundamental discovery of Aristotle which enabled him to explain change and thus to build his philosophy on valid induction. And here perhaps is a point of difference: where Aristotle and St. Thomas conclude to potency and act from a mass of induction and dialectical reasoning, Dr. Tillich on the other hand, omits the scientific steps and appeals to general good sense and to his own really important authority.

It is only, for instance, in the final lesson (*lect. 15*) of the first book of his commentary on the *Physics* of Aristotle that St. Thomas formally distinguishes as such the non-being that is privation (*non esse simpliciter*) from the non-being that is matter (*non esse per accidens*), the only potential principle so far considered. Unlike Dr. Tillich, then, Thomists may be said to venture upon the primal insight about potency and act only after lengthy scientific analysis of the obvious fact of material change.

The kinds of potencies first considered by Thomists and by Dr. Tillich differ too. Both acknowledge that potency is known only through act. But Dr. Tillich starts with the act of existing, whereas the Aristotelian-Thomistic thinkers begin with accidental forms which men observe first and most easily understand. It may be questioned whether Dr. Tillich would have considered the act of existing precisely as such if he had not first, either through formal study or through simple informal thinking, gone through the cosmological reasoning. At any rate, one surmises that he does not provide full scientific evidence in this passage for the use of a highly technical term; yet he seems to have much the same valid insight as Thomists have. (Potency as the limiting principle, however, is left—unfortunately—unmentioned.)

Dr. Tillich continues. The existing being, he says, is not completely out of non-being. "An actual thing stands out of mere potentiality; but it also remains in it. It never pours its power of being completely into its state of existence. It never fully exhausts its potentialities. It remains not only in absolute non-being, as its finitude shows, but also in relative non-being, as the changing character of its existence shows." (p. 21)

Here Thomists find a familiar distinction. An actualized created substance can have capabilities for further perfection. These are capabilities according to which the substance, while remaining itself, is able to be or to act in a certain way. The potencies are potencies for accidental form.

Indeed Dr. Tillich's view is familiar to Thomists; yet immediately they note that he, while beginning well the remarkable analysis of experience, stops short; were he to continue, were he to examine being more closely, distinguish one form from another, seek reasons for the difference, labor for precise definition, then he would indeed be speaking the language of exactitude, the mother-tongue of Thomists. Linked stacks of cold detail,

the latter would say, seem demanded not just by need for systematic coherence but for fidelity to the fact. Dr. Tillich's metaphorical language certainly points the way and expresses the insight when he says "never pours its power of being" and "never fully exhausts its potentialities." But such artistic vision remains at the foundation of philosophy.

Greater precision might have saved Dr. Tillich from what seems an unusual use of the term *potentiality* in his discussion of "original sin." (pp. 33-36) When he speaks of the "dreaming innocence," of the unactualized, pre-time, pre-existence "man," he attributes to the "potentiality" the property of actualized substance—the ability to make a free decision which results in estranged existence. Again, in one place he says that God is self-actualizing. (p. 23) If act is used technically, self-actualization is impossible.

However, despite the inconsistencies, generalities, and open differences, it seems possible to conclude that between Dr. Tillich and the Thomists there is some agreement about potency and act.

When the Tillichian use of *essence* comes under consideration, though, term-matching becomes even more complex, discouraging, but nonetheless still worthwhile. At first Dr. Tillich seems to mean what Thomists mean by essence—the whatness of a thing, that which real definition signifies. He says: "Within the whole of being as it is encountered, there are structures which have no existence and things which have existence on the basis of structures. Treehood does not exist, although it has being, namely, potential being. But the tree in my back yard does exist. It stands out of the mere potentiality of treehood. But it stands out and exists only because it participates in that power of being which is treehood, that power which makes every tree a tree and nothing else." (p. 21)

Thomists also say that treehood as essence or nature cannot exist simply of itself because in matter-form composites individuating principles must be added to the nature before it becomes proximately capable of actualization. Although Dr. Tillich's words lack such precision, he does seem here to be in some real agreement with the Thomists. However, it is necessary to seek elsewhere to find if he does really mean essence as a kind of universal nature. For instance, in discussing the Incarnation, he says that: "Human nature can mean man's essential or created nature; it can mean man's existential or estranged nature; and it can mean man's nature in the ambiguous unity of the two others. . . . In a culture in which nature was the all-embracing concept, the term "human nature" was adequate. Men, gods, and all other beings which constitute the universe belong to nature, to that which grows by itself. If God transcends creation then the term "divine nature" will mean only that which makes God into God. . . . In this sense, nature is essence. But God has no essence separated from

existence, he is beyond essence and existence. He is what he is. . . . This could also be called God's essential nature. But then one actually says that it is essential for God that he transcend every essence. A more concrete symbolic expression of this idea is that God is eternally creative, that through himself he creates the world and through the world himself. There is no divine nature which could be abstracted from his eternal creativity." (p. 147)

Here Dr. Tillich seems to hold that somehow nature can be abstracted; yet he has fallen down in his use of analogy. Is it not possible that essence really is the whatness of a thing; that it is really equatable in some sense with nature; that in certain things it is the same as that principle of the existent which makes it capable of existence; that in One Being it can be identical with the act of existing *in re*; that essence as nature in all these uses continues to retain the real *ratio* of its meaning; and that therefore it is not always univocal, but rather can be analogous?

Undoubtedly at this point Thomists find Dr. Tillich obscure and even inconsistent. Nevertheless even here he seems to manifest some approximation or shadings of Thomistic meaning.

In still another passage there is question about Dr. Tillich's use of essence when he says that the scholastic philosophers " accepted the contrast between essence and existence for the world but not for God. In God there is no difference between essential and existential being. This implies that the split is ultimately not valid and that it has no relevance for the ground of being itself. God is eternally what he is." (p. 22)

Despite some of the wording, it is not impossible that Dr. Tillich may finally mean, through a cloud-banked artistic expression, something of what Thomists mean about God. But in this passage he does reveal beyond question that he has not grasped the concept of potency as limiting principle, nor, therefore, has he seen the need, or even the possibility, of an analogous use of essence. God does have a whatness, unknown surely to our plain minds; but He does not have it as limiting principle of His being. The yes-no of analogy applies.

It may be remarked that the Thomist view, then, is not that the application of essence and existence is ultimately invalid but merely that the real distinction between them does not apply to the Ultimate, that, in fact, not even the ratio of essence and the ratio of existence is distinct in God, but that the ratio of His essence is to exist.

To discover yet more of what Dr. Tillich means by essence, we may turn to his comparison of essence and existence. He says that: ". . . man's existential situation is a state of estrangement and not reconciliation; it is dehumanization and not the expression of essential humanity. . . . Existentialism gives an analysis of what it means to exist. It shows the

contrast between an essentialist description and an existentialist analysis. description of the transition from essential to existential being. It is the profoundest and richest expression of man's awareness of his existential estrangement and provides the scheme in which the transition from essence to existence can be treated." (p. 31)

From these texts Thomists may conclude that Dr. Tillich means by essence what they mean by a substance with all its accidental perfections, a substance that is *bonum simpliciter*—a perfect being. When they recall that Dr. Tillich has not distinguished substance and accident, they are all the more confident that his term essence may mean precisely the ideally finished existent. For in later discussion of man's restoration to essential being through the New Being, Dr. Tillich indicates that essential being is capable of existing.

Yet in the above texts he seems to imply that such a perfected essence is precisely not capable of existing because the "leap" into existence involves necessarily a deterioration of essence; in fact, it involves an actualization of more than was potentially "there." This view seems reinforced by Dr. Tillich's statement that the "Fall" was a choice of actual existence as against "dreaming innocence." But according to this interpretation of essence, the existence of an unestranged man—even "Jesus as the Christ" —would be impossible; and this conclusion is surely not intended by Dr. Tillich. It is therefore not unreasonable to think that Dr. Tillich may finally mean by essence something which Thomists would express in other terms.

But at best, when all is said, Dr. Tillich's terminology remains for the Thomist obscure, ambiguous, and perhaps in places even contradictory.

Nevertheless, his are sometimes the very words that Thomists use; his meanings are sometimes near Thomistic meanings; and his mere selection of such words reveals that he thinks philosophy worthwhile in the science of the "ultimate concern." Perhaps Thomists, long muted in the presence of Protestants by the language barrier, can talk at least little with Dr. Tillich. They can talk about their similar sets of letters. And, as further reflection seems to hint, if Thomists do not start here, can they start anywhere? If they do not first sit down over potency and act, nature and essence, of what use to babble in their high-chairs over the Incarnation of the Word of God?

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Martin Heidegger. By MARJORIE GRENE. New York: Hillary House. 1957. Pp. 128. $2.00.

This little book sets itself a rather big task. It is not, as the unwary might expect, an "introduction" to the thought of Heidegger, another of that wearisome genre of neutral presentation followed by timid and tentative hints as appraisal. Our author intends to tell us what Heidegger is worth philosophically. Unfortunately, she begins on a belligerent note and concludes with this savage remark: "Perhaps it is the voice of a seeker after dim and distant goals—but a not quite honest seeker, a lover of intellectual notoriety who knows that this scathing rhetoric will be accepted and admired." (p. 125) Perhaps Mrs. Grene's own rhetoric will make her book acceptable to those who will not, as she obviously has, devote themselves to the study of Heidegger.

Mrs. Grene's charge of dishonesty is based in large part on her inability to see continuity between the early and late writings of Heidegger in terms of "ontology." When she does find herself able to praise him, it is Heidegger the existentialist and not the Heidegger who would be a metaphysician that she admires. And, of course, Heidegger has denied (dishonestly?) ever being an existentialist in the usual acceptation of that term.

By an analysis, necessarily truncated, of *Sein und Zeit, Kant und das Problem der Metaphysik* and *Einführung in die Metaphysik*, our author moves inexorably towards the conclusion we have quoted. This discussion of *S. u. Z.*, because it sets aside the ontological intent of the work, is on the whole sympathetic. Indeed, in chapter three, Mrs. Grene sees this work as calling attention to factors usually absent from existentialist studies of ethics, but she balks at calling the "existential analysis of *dasein*" ontology. Rather, it is, as Sartre has suggested, philosophical anthropology. One can easily agree that *S. u. Z.* is not ontology in any usual sense of that term, but one must ask if this is claimed for the book. Mrs. Grene refers to the notion of *fundamentalontologie*, but she does not seem to appreciate the relevance it might have for the ontology she is interested in. I should like to return to this.

The analysis of Heidegger's book on Kant is a very interesting one, although our author is too impassioned to understand what Heidegger may mean by time as the horizon in terms of which being appears to us. Here as later when speaking of the *Einführung*, she relates the familiar criticisms of Heidegger's excursions into Greek etymologies, discounting without discussion his own defense of his procedure. Her final estimate of Heidegger is that, despite himself, he has earned a niche in history thanks to the

existentialism he disavows, but that his ontology is only mystification, rhetoric, an intentional confusion of issues.

Since her book is quite brief, many of our author's conclusions will seem precipitous and hasty. This reviewer would agree with many of them while wishing they had been arrived at more cogently. To return to a previous implication, what is lacking in this book is the step beyond criticism, the philosophical assimilation of Heidegger's efforts. There is hardly a hint in this direction. Heidegger is seen as "a petulant and over-anxious self-apologist: concerned to tell us that this high, unintelligible search is all he has ever undertaken—that what he did achieve he never intended or achieved at all. Were it not for his arrogance, it would be a tragic story: the tragedy of an artist who has destroyed his own work." (p. 125) One can easily agree that Heidegger has contributed to the study of man as moral agent, but does this recognition entail treating his aspirations towards metaphysics as dishonest? The Thomist who agrees with Fr. Isaac, O. P. that the philosophy of St. Thomas is to be found in his commentaries on Aristotle, will be interested in the Aristotelian flavor of many of Heidegger's emphases. Perhaps a sympathetic reading of Heidegger from another point of view, *his* point of view, would indicate that his writings have relevance, not for *a* metaphysics, but quite simply for metaphysics. The Thomist is not going to call the "existential analysis of *dasein*" metaphysics either, but in that analysis he is going to see a return to what is most known, to the world given first of all and primarily to man as artisan. The first chapters of the *Metaphysics* are complemented by much of what Heidegger has written. This, together with his concern with etymology, the primitive, everyday meaning of terms, is fundamentally Aristotelian and our only safeguard against a technical philosophical language which does not communicate. Where Heidegger can help us is with the presuppositions, the ground of metaphysics. Approached in this way, we need not demand of him that he admit to being an anthropologist and stop this nonsense about the way back to the Greek conception of being.

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BRIEF NOTICES

John Calvin on the Christian Faith. Edited by J. T. McNeil. New York: Liberal Arts Press, 1957. Pp. 253. $.95, paper.

The solicitude for a "return to the sources" is a fact of our century. This preoccupation is verified in various spheres: in the studies of Catholic and non-Catholic theologians, but particularly in the work of those Christian churchmen who are engaged in the "ecumenical question." In this last field the word "sources" has a special nuance, namely, those works which are the signposts of division, the landmarks from which two or more paths of theological thought and religious experience take their origin.

The writings of John Calvin are, in this sense, "sources" par excellence. Among all the figures of the period of the Reformation—one of the two grand historical moments of dissidence—Calvin stands out as the author of a theological system without equal for its consistency. For this reason, and also because of the profound influence Calvin has had even upon numerous Protestant confessions not in direct line with his system, the ensemble of his writings is important at the present time. This is especially true of the *Institutes of the Christian Religion*, his principal work.

In the introduction to this small volume the editor includes a short resume of Calvin's life and of the evolution of the *Institutes*, from the first edition of 1536, to the final redaction of 1559. The bulk of the translated texts (126 pp.), chosen from writings which fill fifty-nine volumes of the series *Corpus Reformatorum*, are from the *Institutes* themselves. The selections from the biblical commentaries are but samples of Calvin's manner of exposing the Scriptures, while the letter addressed to Cardinal Sadolet is an example of the sharp and sometimes brutal polemic of the sixteenth century.

If one were to set the limits of Calvin's worth, this polemicism (common, however, to all his contemporaries, with scarcely an exception) is the negative pole, the positive being his otherwise clear expression of the primitive reformed doctrines, namely, the exclusive authority of the Scriptures confirmed by the immediate testimony of the Holy Ghost, an ecclesiology based upon invisible election, a sacramental theology in which the two sacraments become signs confirming to the heart of the believer the divine promises made in the gospel.

The selected bibliography of Calvin's works (p. xxxi) makes mention of the recent edition of Peter Barth, but lacks any reference to the *Corpus Reformatorum*. Since the book is designed for those who are getting

acquainted with Calvin, it would have been well to include the data concerning this most basic complete collection. The editor has improved considerably those selections which were taken from the *Institutes* (translation of John Allen, seventh edition) by identifying the patristic citations made by Calvin (where possible), entirely absent in the translation employed.

Calvin's doctrine of the Holy Scriptures is surely first in importance, both because of its basic character and because of its adoption by nearly all Protestant confessions. The editor is correct in placing the Calvinist concept of a double predestination in the background. It is wrong to isolate this erroneous doctrine from the ensemble of Calvin's thought and to make it the hub around which turns his whole system. The excerpts from the *Institutes* verify this.

In contrast to the methodical approach of the *Institutes* the tiny morsels of exegesis show a different trait of Calvin's spiritual physiognomy. Particularly in the paragraphs taken from the commentaries on the Psalms, one notes a certain tenderness foreign to the usual description of his character. These pages also show us Calvin, the independent humanist, going to the original text, forging an interpretation from that datum, and ready to make a trenchant criticism of a previous tradition based on a defective rendition.

The letter to Sadolet reveals, finally, the Calvin of bitter controversy. The Catholic reader finds here misunderstandings with regard to the Church which have been propagated right up to our time, and which constitute one of the principal obstacles to an effective, fruitful ecumenical dialogue. It is well that such misunderstandings be brought out into the open. Protestants need to re-examine them; Catholics need to know what is behind them and how to avoid putting a stumbling-block in the way of our separated brethren.

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The Logical Problem of Induction. By G. H. Von Wright. New York: Macmillan, 1957. Pp. 249. $4.00.

Professor Von Wright, in this second, enlarged edition of his work, has provided us with a most thorough and illuminating survey of the various solutions to the "logical problem of induction" as it was raised by David Hume, and a critical evaluation of each. In the light of Von Wright's analysis and criticism, he comes to the conclusion that the problem posed

by Hume is insoluble. This was the view of Hume himself. Nevertheless, even with this conclusion, the author defends the value of inductive methods for conjecture about future events and insists that the inability to solve the problem of Hume does not mean that the real world has become thoroughly unpredictable in its behavior.

The author is fully aware of the multiplicity of meanings of the term " induction " in Aristotle, as found in the *Topica* A 12, *Anal.* Pr. B 23, and *Anal. Post.*, B 19 (pp. 8-9). He very carefully restricts his usage of the term induction to correspond to what scholastics usually call " induction through incomplete enumeration," which he terms " ampliative induction." (p. 10) This is understood here to be a process of obtaining, from non-analytically connected particular data, synthetic propositions about yet unknown data. His problem is a " logical " as opposed to a " psychological " problem—he is investigating the nature of the logical relation between the given data and the inductive conclusion which might justify drawing such a conclusion. (p. 2)

The author conceives this problem of justifying induction to have arisen in Hume's criticism of induction. He considers Hume's empiricist presuppositions to be purely accidental to this problem itself. (p. 15) The problem must arise wherever we seek a synthetic proposition in anticipation of experience, it is entirely a question of logical relations and in no way of matters of fact. Hume claims that no such synthetic proposition anticipating experience can logically follow from data in which the terms of such propositions are not given in an analytical relationship. This history of the " logical problem of induction " is a history of attempts to justify the thus criticized reasoning.

The author considers in order the attempted solutions of the problem in terms of synthetic a priori judgments (Chapter II), conventionalism (Chapter III), inductive logic (Chapter IV), and probability theories (Chapters V-VIII). It would be both inappropriate and impossible to describe in this brief review the author's detailed treatment and refined criticism of these attempts. The pleasure of following the close reasonings of the author here is left to the reader. But it is indeed a rare delight to watch this master of his subject dissect the various answers to discover hidden presuppositions and inadequacies which invalidate these answers, or qualify them as incomplete.

In Chapter IX, the author concludes, in confirmation of Hume, that there can be no *logical* justification of this type of induction at all. In Chapter VIII, however, he has defended the use of induction as a *policy* (p. 159) for conjecture about the future in the cases in question. He insists that an inductive policy is the only reasonable method to use here, since any reasonable method in this domain is necessarily inductive in the

sense here taken. The reasonability of "other" policies is ultimately traceable to some induction employed in them.

While the author insists that the difficulty of Hume is insoluble, that there is no *logical* justification of induction—indeed, that the very demand for such a justification is self-contradictory—he also maintains that this conclusion is a purely logical one and does not affect our factual knowledge and feeling that future events will, after all, occur in such and such a way. Induction, therefore, still can remain a good *policy*. The constructive task of inductive theory is to seek for a better understanding and development of inductive policies, now that the critical task of showing the self-contradictory nature of a "logical" justification of induction has been completed.

The author, of course, has limited himself to the *logic* of *ampliative* induction. The continuing ability to predict the future with a good degree of probability in many cases can only be possible in the framework of some intuitive induction not discussed by the author. This conclusion is inescapable; one may wonder why the author has not explicitly admitted it. And if there is some, however obscure, intuitive induction taking place, the whole problem becomes transposed onto a new plane. For certain inductive postulates presupposed to the use of ampliative induction now need not themselves be justified by an appeal to further ampliative induction but rather to this intuitive induction. The postulate of the uniformity of nature is of particular interest in this regard. One need not maintain the existence of a strict uniformity in nature, but one can very easily claim a *tendency* of long-established uniformities to endure. This seems to be a datum of such an intuitively inductive kind as we have been speaking of. Nor is it necessary to say that all propositions yielded by intuitive induction are *analytically known*—analytic they must be in themselves, but it seems quite possible that their analyticity might not appear in an intuitive, but obscure, induction in which nevertheless their necessity appears. An example of such a proposition might be the preceding proposition concerning the tendency of long-established uniformities to endure. Clarification reveals this proposition as *analytic*, since what happens "for the most part" is "according to nature," and therefore the "object of some tendency"; but even prior to this clarification the proposition might be held as *necessary* by common sense.

The preceding suggests the possibility of a Thomist analysis of induction (ampliative), making use of such discussions as these of Von Wright, against a background of intuitive induction. The importance of this work of Von Wright in clarifying the "logical problem of induction" as arising from Hume and showing its essentially self-contradictory character is very great. But the limitations of this treatment arising from the exclusion

of intuitive induction are also rather serious. Also, the style of the author seems a little too ponderous at times, although this is amply compensated for by the wealth of material and insight. It is a most valuable work for all, especially Thomists, who are interested in induction.

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The Problem of Universals. A Symposium: I. M. BOCHENSKI, ALONZO CHURCH, and NELSON GOODMAN. Notre Dame: University of Notre Dame Press. 1956. Pp. 54. $0.95. (paper).

A symposium is literally a drinking together and apparently the old Greeks had better words for things under those circumstances. To enjoy the symposium held on universals at Notre Dame on March 9-10, 1956 Vodka might be of help. Although entitled *The Problem of Universals*, it seems only Father Bochenski knew that was the subject up for discussion.

Alonzo Church of Princeton University spoke on "Propositions and Sentences" or at least that was the title of his paper. He tells us that he is not taking proposition in the traditional sense, which was fortunate since his notions on it were rather vague to begin with. Rather he is considering proposition in the abstract sense. The closest he comes to defining what this means is the following: "A proposition in the abstract sense, unlike the traditional proposition, may not be said to be of any language; it is not a form of words, and is not a linguistic entity of any kind except in the sense that it may be obtained by abstraction from language." (p. 4)

However, the lack of a clear definition of terms is unimportant because Professor Church resumes his paper with an historical study on the discovery of the abstract proposition and ends his paper with a criticism of the Quine-Goodman finististic nominalism. Church's closing proposition (or sentence, or whatever it is) must have been the understatement of the symposium: "Sketches, informal suggestions, and general informal surveys such as that I have been making have their place, but in the end are futile, in view of the evident logical difficulty of the problem at hand, unless they issue in a detailed logistic formulation and study of at least one successful solution." (p. 11)

Professor Nelson Goodman of the University of Pennsylvania takes up his favorite topic which is Professor Goodman's special brand of Nominalism. To the symposium on universals, Professor Goodman brought his paper "A World of Individuals." Goodman's contribution has many advantages.

He is clear and dogmatic on what he holds and presents his case with wit, especially when answering his own objections, and with philosophical aplomb. He seems to have captured the Greek idea of a symposium.

Finally there is the noted Dominican authority on symbolic logic, Father I. M. Bochenski. Without making notable use of Aristotelian or Thomistic terminology, Father Bochenski presents the traditional view on universals. Here is a Thomist who can speak in the jargon of the modern philosopher. He seems to understand what they are driving at; he is sympathetic to their views; but in the end he comes up with the answers of the realistic school.

It would be unfair to conclude that the booklet *The Problem of Universals* is merely a nice attempt at getting men of different philosophical outlook together but nothing more. The three men have presented their own versions on a problem that has challenged the minds of great thinkers for centuries. One can read these contributions with much profit while still wishing that something more conclusive might have been produced.

Raymond Smith, O.P.

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The General Science of Nature. By Vincent E. Smith. Milwaukee: Bruce, 1958. Pp. 413. $5.25.

Vincent Smith's latest book for teaching the philosophy of nature breaks so sharply from the established "cosmology text" tradition that some will regard it as a daring innovation in text-book writing. Yet the novelty is nothing to alarm the Thomist who takes his science of nature from its primary source, for it consists essentially in a return to Aristotle's *Physics*, as seen through the commentary of St. Thomas. Basing his exposition on Aristotle's reasoned analysis of the world of nature, amplifying his treatment of first principles and logical methodology to meet modernist attacks from rationalism and positivism, while abbreviating other parts of lesser pedagogical importance, the author has succeeded in writing an eminently teachable beginner's text suitable for use at the college or seminary level. The work will be especially welcomed by those who are interested in the Aristotelian renaissance in modern Thomism, for it makes available, in language intelligible to the first-year philosophy student, the fundamental thought on which Aristotle built his entire philosophical synthesis.

The over-all impression one gains from this book is that of a work well

done. The style of writing is bright and commands attention: if in the modern idiom and occasionally flippant, it should by the same token appeal to the American collegian, to whom it is obviously addressed. In content, it is a faithful exposition of all the important notions developed in the *Physics*, with a sensible reapportioning of the space given to the various Books. For instance, the first two Books are expounded in detail throughout the first twelve Chapters, while the remaining six are treated more summarily in the last seven Chapters. Topics which receive the greatest attention in the first part include the nature of science and its divisions, the first principles of nature, the differences between physical and mathematical knowledge, and the role played by causes in a strictly scientific study of changing reality. Then, in the second part, motion and its problems are given thorough investigation, together with the infinite, the continuum, time and place, after which the whole development is completed with a cogent statement of the proof for the existence of a First Unmoved Mover. Taking a sympathetic but critical view of modern science, and presupposing nothing from metaphysics, the author establishes foundations from which a two-fold development is possible: one in the direction of specialized studies in the physical and biological sciences, the other in the direction of metaphysics.

The title of the work will undoubtedly arouse some discussion in contemporary scholasticism. Dr. Smith justifies "The General Science of Nature" on the grounds that his work is concerned with nature, and that while "philosophy" is almost equivocally used in the academic world, "general science" accurately describes the general type of knowledge about nature which it furnishes, while sufficiently distinguishing its subject matter from that of the specialized sciences of physics, chemistry and biology. We agree with this on principle, but because of the modern educational practice of employing the term "general science" to designate a low-level course in personal hygiene and elementary biology, would have preferred the perhaps more sophisticated "Foundations of the Science of Nature" or "The Fundamental Science of Nature." We recognize with the author, however, that the term "science" needs reassertion in its traditional Aristotelian sense, instead of giving it over completely to positivism, and see no reason for discarding it out of deference to a widespread modern usage in the positivist sense.

Several features of the book are noteworthy. The first is the excellent use made of logical doctrine in laying bare the structure of natural science, particularly with regard to definition, demonstration and dialectics; the result should give new meaning to logic as an instrument to be used methodologically in the real sciences, rather than as a barren formalism unrelated to scientific investigation. The second is the author's solution

of difficulties arising in modern thought and not explicitly treated in traditional Aristotelian doctrine. Without giving numerous *sententiae* or setting up "straw men," he meets the thornier objections in his own exposition, and leaves others for the student to solve as problems, usually by pairing off a modern citation against a corresponding one from Aristotle or St. Thomas. There is an especially clear treatment of Newton's mathematical type of dialectic, and of Hume's objections against causality, and the discussion of the final cause is quite good. The author has also provided copious material to be covered independently by the student or at the option of the teacher, and gives a good selection of texts from traditional and modern sources, together with review questions and problems, all of which make his text a flexible one from the pedagogical point of view.

For those who are interested in the scholastic manual type of text-book, it should be noted that this work covers only the eight Books of the *Physics*, without treating the matter of *De Caelo* or *De Generatione et Corruptione*. Likewise there is no explicit treatment of essence and existence, the principle of individuation, the subject of inhesion of action, compenetration, multilocation, and the accidents in the Eucharist,—topics which are usually discussed in cosmology texts. For our own part, we are quite content with this departure from current practice, since there is a pressing need for a clear and detailed exposition of the fundamentals of natural philosophy, while none of these topics pertain directly to the science of nature. On the other hand, they can very well be left to the metaphysician and the theologian, who should have no difficulty teaching them to students if they are already well grounded in the doctrine of the *Physics*.

Perhaps the most remarkable thing about Dr. Smith's book is that it brings the development of books on natural philosophy "full circle" to the point where we have once again a good paraphrase of Aristotle's thought available for contemporary readers. The text of Aristotle itself is far too cryptic for direct study by the average student, and the medieval commentaries already presuppose a considerable philosophical formation, while perforce they say nothing about modern problems. The seventeenth-century *cursus*, giving a brief summary of the Aristotelian text and then launching into detailed treatment of special difficulties, is mainly of use to the specialist, while the scholastic manual, with its concentration on "system building" and complete disregard for the order of invention, is methodologically abominable. Attempts at pedagogical simplification or at the incorporation of "contributions" from modern thought, typical of the neo-scholastic type of text-book, have either degenerated into an epistemological type of reflection on natural knowledge, or have departed so far

from traditional thought as to try to absorb natural science into metaphysics. Thus it is not surprising that the more evolved products becoming available in the cosmology text-book have borne little resemblance to the pristine thought of Aristotle. When all is said and done, however, there is no better approach to psychology, ethics and metaphysics than that worked out by the Master of Stagyra through the *Physics*. It is the great merit of Dr. Smith's book that it recognizes this fact, and makes best use of it to provide an introduction to Aristotelian philosophy that is at once pedagogically and methodologically sound, and well adapted to meet the needs of the modern scholar in his search after perennial truth.

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New Testament Introduction. By Alfred Wikenhauser. New York City, Herder and Herder, Inc. Pp. 580. $7.80.

Professor Wikenhauser's *Einleitung in das Neue Testament*, published in 1953 (2nd ed., 1956) is an impressive contribution to our biblical literature. In Part (The Canon of the NT), the author traces the gradual growth and fixation of the official list of inspired writings. Part II (The Text of the NT) is a skillfully organized presentation of pertinent information concerning ancient modes of writing, writing materials, NT manuscripts, patristic citations ("in no way inferior to the Greek MSS. in value" [p. 90; cf. p. 140 f.]), the various versions, and finally, a brief exposition of the present position of NT textual criticism. Part III (The Origin of the NT Writings) covers what is generally described as Special Introduction (cf. pp. 1-10). The *concordia discors* of the first three Gospels, usually referred to as the Synoptic Problem, is clearly set forth together with proposed solutions old and new, but the inadequacy of them all is acknowledged. Wikenhauser himself favors the Two Source theory.

Since 1919, Form Criticism of the Synoptic Gospels, with Dibelius and Bultmann its chief expositors, has claimed much attention from the bibilical scholars. The limitations of the theory are not inconsiderable (e. g., literary categories are difficult to define, and the creative power of the primitive Christian community has been exaggerated at the expense of the eye-witness contribution to the formation of the gospel tradition), but the basic correctness of the theory has contributed to a better understanding of the dark period when the Gospel material was transmitted orally. (p. 271)

The profound differences between the Synoptics and the Fourth Gospel, especially in modes of thought, language, and theology, are indicative of John's independence as an author. Wikenhauser briefly considers the possibility of a relationship of dependence between John and the Dead Sea Scrolls and the Damascus Document, but decides against it. (p. 318)

After a consideration of the Acts of the Apostles (written by Luke *after* Paul's death, possibly not before 80 A. D.), the author turns to the NT epistles. After a brief life of Paul (pp. 351-361), he is content to expound the problems—and their proposed solutions—arising from the Captivity Epistles (Eph., Col., and Phm. were written (61-63, at Rome) at the same time, Phil. earlier and from a different prison). Here as elsewhere the author is content to state the problems honestly, without forcing his conclusions from the evidence at hand.

In perusing this *Introduction* one is conscious of being in contact with a well-informed and judicious scholar. The bibliography prefixed to each new section is impressive not so much in its quantity as in its quality, being modern, wide in extent, and very selective. Professors of Scripture will undoubtedly welcome this Introduction as a solid contribution to New Testament studies.

Remarkably few *errata* obtrude themselves upon the reader of this handsome volume. The note on page 19 is contained by the last 18 lines of page 20. Origin appears once for Origen (p. 113); GBQ for CBQ (p. 317). Among the geographical works of reference (p. 13), one should expect to see reference to L. H. Grollenberg's *Atlas of the Bible* (Nelson, N. Y., 1956).

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Christ and His Sacraments. College Texts in Theology, Vol. 4. By Thomas C. Donlan, O. P.; Francis Cunningham, O. P.; Augustine Rock, O. P. Dubuque: Priory Press, 1958. Pp. 648 with index. $4.95.

Imperative and diversified tasks presently confront the Catholic theologian in America. None of these more engages his attention than that generically called "Theology for Laymen.' In simplest terms this is the attempt to put within the reach of all well-educated Catholics the wisdom of the faith; the attempt to systematically uncover the rich intellectuality of sacred doctrine for Christians who will never be professional theologians. While the "theology for laymen" movement has been organized only in recent decades—if, indeed, it can properly be said to be "organized"—it

is neither a fad, nor really new, but is simply one modern form of the Church's ancient struggle to "teach all nations." Its importance rests especially upon its assured doctrinal foundation; namely that since all Christian life is a created participation in divine life, and since all divine life and causation is radically intellectual, therefore all Chrstian life and devotion ought to have a lofty, clear, intellectual basis.

Puzzlingly, the "Theology for Laymen" program has suffered from an imbalance of ideals as against performance. Ardent defenders of its theoretical value abound; skilled, experienced teachers willing to undertake the tedious labor of providing an adequate literature are far too few. The movement cannot possibly endure without both texts and an ever expanding literature, addressed to widely different reader levels. Regrettably, neither satisfactory texts nor a more popular (yet systematic) literature are available, in spite of some attempts to meet this greatest need.

The series entitled "College Texts in Theology," being gradually published by the Priory Press, of Dubuque, promises to provide thoroughly satisfactory texts for college courses in sacred doctrine. Of the series the volume, *Christ and His Sacraments*, corresponding to the *Tertia Pars* and the *Supplement* of St. Thomas' *Summa Theologica* is the latest to appear. It is not just an addition to the available laymen's books on theology; It is also an important, balanced, and thoroughly Thomistic doctrinal work.

The scope of this work is an analysis of certain profound mysteries of the Christian faith, namely, the mysteries of the Incarnation and the Redemption; the mysteries of Mary and the Church; the mysteries of our sacramental life and the eternal life to which the sacraments lead.

The initial chapter treats of the Scriptural basis and the historical development of the doctrine of the Incarnation; the next six chapters follow St. Thomas' order as to the fitness, the mode and the consequences of the redemptive Incarnation. A special chapter on Mary and her role in human salvation is inserted after the treatment of Christ; then follows an extended treatment on the Sacraments, a single Chapter on the Church, and one final Chapter *de novissimis*.

Unevenness of treatment unfortunately does mark this work. At times it contains a highly attractive, and strikingly beautiful analysis of ancient Christian faith. Thus Chapter Two, on the nature of the Incarnation, is easily the most engrossing and penetrating section of the entire work, although it deals with the most difficult problem raised in the tract *de Christo*. Some other Chapters, on the other hand, are hardly more than a restatement in outline form of St. Thomas' teaching. Markedly, they lack impact, for the force of Aquinas' own thought is diluted, giving a reflection of St. Thomas' genius that is quite lifeless and formalized. No

doubt, such chapters will offer to the teacher the greater opportunity to utilise the presentation according to his own conviction, and choice of emphasis.

From this volume any reviewer could compile a list of propositions, or even some rather basic view-points which he would question. This reviewer is no exception. Some Scripture exegetes for example will wince at the flat statement (p. 14) that Isaias 9, 6 prophesies the *divinity* of the Messiah. Excellent Catholic exegetes dispute the point. Occasionally other Scriptural texts, too, are handled a bit unhappily. The Chapter on the Church (Chapter 16) is singularly sketchy and so suffers from an attempt to do too much that not even a clear, precise notion of the Church emerges. The treatment here is superficial. The chapter on Our Lady (chapter 8) can be critisized as lacking unity, adequacy, and penetration. In the book as a whole, non-Thomists especially will be more than once offended by the quick dismissal of what they consider well-established outlooks, and convictions. In short there is hardly any chapter that could not be criticized unfavorably, on some ground, by some one; but that surely is a hazard of any human undertaking, and most of all perhaps of a text dealing with so vast a subject. On the whole the work is most satisfying, and ought to prove immensely helpful to college teachers and students of sacred doctrine.

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